

EVALUATION OF DEVELOPMENT PLANNING AND
ECONOMIC GROWTH IN EGYPT, U.A.R.

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A DISSERTATION PRESENTED TO THE GRADUATE COUNCIL OF
THE UNIVERSITY OF FLORIDA
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE
DEGREE OF DOCTOR OF PHILOSOPHY

UNIVERSITY OF FLORIDA
1969

ACKNOWLEDGMENTS

The author wishes to convey his sincere appreciation to his supervisory committee chairman, Dr. W. W. McPherson, for his untiring guidance and encouragement during his graduate program. The debt of gratitude owed Dr. McPherson by the author can never be fully expressed. The author is indebted to Dr. R. H. Blodgett and Dr. C. E. Murphree, members of his supervisory committee, for their suggestions for improving the content of this dissertation.

Appreciation is expressed to Dr. K. R. Tefertiller and Dr. H. B. Clark for their support and understanding of student problems.

The author is also indebted to Dr. M. R. Langham, former member of the supervisory committee, for his guidance during the early stages of the author's graduate program.

Special appreciation is also extended to the Government of the United Arab Republic for providing the author the opportunity to complete his graduate study at the University of Florida, and for their complete cooperation in making this dissertation possible.

Particular thanks are due to the typists: Miss Linda Di Duonni for typing the semi-final draft of the manuscript, and Mrs. Diane Miller for typing the initial draft and the final manuscript.

Finally, the patience, sacrifice, and devotion of the author's wife, Sohair, and children, Walid and Maggy, are accorded his sincerest gratitude.

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Chapter I

INTRODUCTION

Nature and Scope of the Problem

Egypt is formally known now as the United Arab Republic (U.A.R.). This name was adopted during 1958 with the union between Egypt and Syria. As a result, the U.A.R. was divided into two regions: Egypt or the southern region, and Syria or the northern region. However, the union was dissolved in 1961. U.A.R. was then reserved for the name of Egypt. Throughout this study, Egypt is the area of study.

Egypt was under foreign rule for about four thousand years. Foreign rule dates back to the Ancient Egyptian Era when Egypt was invaded by the Hiksos. Afterward there were occupations by the Greeks, by the Moslem Empire, and by the Turkish Empire which put Mohamed Ali in power in 1805. Next came the occupation by the French, and finally the British occupation which lasted from 1882 to 1956.

A significant change occurred with the Revolution of July 23, 1952 which ended rule by the Mohamed Ali family. Finally, true independence came on June 19, 1956 when the last British soldier left Egypt. After 1952 there were significant changes in the government organizations and policies. In 1960-61, for the first time in the history of Egypt a formal Social and Economic Development Plan was formulated.

The purpose of this study is to measure rates of economic growth, and to identify and where possible to measure factors that have affected growth. The hypothesis under study is that changes made since 1952, and particularly during the 1961-65 plan implementation period, have contributed to more rapid development and economic growth. Particular emphasis in the analysis is placed on agriculture. Conclusions should contribute to more effective development and implementation in the future.

Factors Related to Development and Growth

Rates of change in the levels of income are used as a measure of economic growth, not because income is believed to be identical with ultimate goals or to be a perfect measure of the ultimate welfare of individuals or society, but because we have yet to develop more satisfactory concept with respect to economic growth. An increase in output (income) possibilities, certainly should indicate an increase in the range of opportunities from which choices may be made. Moreover, level of income is usually associated in a positive direction with other desirable conditions such as food supply, health, level of living indexes, and life expectancy.

There are reasons for believing that the opportunity for increasing incomes by merely reallocating existing resources is quite limited. Thus the more relevant factors to be identified and analyzed appear to be developments that are expected to affect the rate of capital accumulation and changes in its coefficients (technological change or new and improved inputs), the human elements in terms of quantity and coefficients, and natural resources and their coefficients. Of

particular importance is the complementary relationships among changes in all of these factors.

The human factor is particularly important because it has, among its functions, the development, organization, and operation of all factors, including itself. Development of the human element involves such things as education, development of skills including entrepreneurship, incentives to work, and social and health securities. Population growth, a major element in labor supply, depends on death rates and birth rates. Death rates and birth rates are affected by health, religious beliefs, standards of living, nutrition and other conditions.

The rate of capital accumulation and the development of new and improved inputs depend upon the marginal propensity to save and invest, and research and education. These are conditions that are influenced by the institutional system.

The quantity and quality of natural resources can be enhanced through discovery and development. The productivity of land and water can also be affected by the tenure system.

The relative size of the agricultural sector indicates that this sector must play a strategic role in development and growth.¹ As a result of industrialization, there is an increase in the demand for raw materials to supply the growing industries, especially the cotton and food processing industries. Growth of agriculture increases the demand

¹For further discussion of the role of agriculture in economic development, see for example: Bruce F. Johnston and John W. Mellor, "The Role of Agriculture in Economic Development," American Economic Review, Vol. LI, No. 4, September 1961, pp. 566-593.

for agricultural inputs from industries such as chemicals, fertilizers, and agricultural machinery. Also, the large rural sector is the major potential market for consumer goods and services produced by the other sectors.

Another strategic part that agriculture must play is that of supplying increased quantities of food to meet the growing and more diversified demand that arises from the rising level of living and population growth. Otherwise, inflation and the use of foreign exchange to import food are likely to retard or even stop economic growth. Agriculture, at least in the early early stages of development, must continue to bring in the major share of foreign exchange needed to pay for the import of capital goods. Furthermore, agriculture must provide a large part of the savings required for investment in infrastructure and industry. Finally, in the development process agriculture traditionally supplies labor for expansion of the labor force for industry and the other sectors of the economy.

Increases in a country's agricultural output are a function of changes in the quantity and quality of its human, land, and capital resources, and production incentives. In a study of agriculture in 26 developing nations, the U.S. Department of Agriculture specified 16 items that were believed to be of special significance in relation to increases in crop output.² These items were: potential for expansion

²U.S. Department of Agriculture, Economic Research Service, Changes in Agriculture in 26 Developing Nations, 1948-63, Foreign Agricultural Economic Report No. 27, (Washington, D.C.: U.S. Government Printing Office, 1965), pp. 14-17.

of arable land, population growth rate, illiteracy rate, health conditions, increase in fertilizers applied per acre of arable land, gross fixed capital formation in agriculture per agricultural worker, annual growth in volume of agricultural credit from institutional and cooperative sources, agricultural research programs, agricultural extension and education programs, percentage and conditions of tenancy, status of tenure improvement programs, marketing facilities, availability of production requisites, fertilizer prices, status of improved seed programs, and annual rate of increase in domestic food demand. All of these items appear to be relevant with respect to agricultural development and growth in Egypt. In addition, availability of water is probably one of the most important factors.

Chapter II

EGYPTIAN RESOURCES AND THE ECONOMY PRIOR TO 1952

Egypt occupies the northeastern corner of the African Continent with an extension across the Gulf of Suez encompassing the Sinai Peninsula. Administratively, Egypt is divided into 16 provinces. Its area of more than one-third million square miles is bounded on the north by the Mediterranean, on the south by the Republic of Sudan, on the west by the Libyan desert, and on the east by the Red Sea.

Human Resources

Egypt's population consists of two groups, Moslems and Christians. It is estimated that 92 percent are Moslems, 6.5 percent are Copts, and the remainder is comprised of non-Egyptian minorities.

Between 60 and 65 percent of the population is rural and depends directly upon agriculture for a living. Moreover, a majority of the urban population is engaged in processing and trading agricultural products. The largest segment of the rural population lives in compact villages throughout the main agricultural areas. Unlike the situation in neighboring countries, few people follow a nomadic way of life because of limited supplies of water and grazing land in Egypt.

Table 1 shows total population and the annual rate of its growth for the period 1882 to 1952. In these years the number of people

Table 1.--Population Growth of Egypt, 1882-1952

Year	Population (1,000)	Annual rate of growth (Percent)	Year	Population (1,000)	Annual rate of growth (Percent)
1882 ^a	6,706		1943	17,814	1.80
1897 ^a	9,635	2.91	1944	18,134	1.80
1907 ^a	11,190	1.61	1945	18,460	1.80
1917 ^a	12,718	1.37	1946	18,792	1.80
1927 ^a	14,178	1.15	1947 ^a	18,967	0.93
1937 ^a	15,921	1.23	1948	19,494	2.78
1938	16,295	2.35	1949	19,888	2.02
1939	16,588	1.80	1950	20,393	2.54
1940	16,887	1.80	1951	20,872	2.35
1941	17,190	1.79	1952	21,584	3.41
1942	17,499	1.80			

^aCensus data.

SOURCE: U.A.R. Central Agency for Public Mobilization and Statistics, General Annual Census, 1964 (Cairo: General Organization for Government Printing Offices, 1965), p. 31.

tripled. The growth rate has increased since the second World War. The high rate of 2.91 percent between 1882 and 1897 is attributed to inaccuracies in the census. The increase in the rate from 0.93 percent in 1947 to 2.79 in 1948 was a result of the fact that after the war many persons over-estimated their family size in order to get more of the rationed consumer goods. The increase from 2.35 percent to 3.41 percent in 1951 and 1952, respectively is due to an influx of Arab refugees from Palestine. The increase in the rate of Egyptian population growth after 1947 is associated with an improvement in health conditions and a consequent decline in mortality rates, especially infant mortality, as well as the rise in the birth rate. Immigration is considered to be negligible.

Table 2 shows, for the period 1923 to 1952, the crude birth and death rates. Birth rate is the number of live births per 1,000 population, while death rate is the number of deaths per 1,000 population. Birth rates were generally high throughout the period. With a rate of over 40 per thousand, the birth rate in Egypt is higher than the average of 37 for the world.¹ The gap is widening between the birth rates and death rates.

Among the majority of the Moslem population, a religious aversion is inherent that makes them resent any attempt to control their numbers. Actually, there is a strong conviction that a large family is encouraged by the teaching of the Islamic religion. Such an attitude is evident

¹United Nations, Department of Economic and Social Affairs, Demographic Yearbook, 1963 (New York: 1963), pp. 142-45.

Table 2.--Egypt's Crude Birth and Death Rates, 1923 to 1952

Year	Crude birth rates	Crude death rates	Year	Crude birth rates	Crude death rates
1923	43.1	25.8	1941	40.4	25.7
1925	43.5	26.5	1942	37.6	28.3
1927	44.0	25.2	1943	38.7	27.7
1929	44.2	27.6	1944	39.8	26.0
1931	44.5	26.6	1945	42.7	27.7
1933	43.8	27.5	1946	41.2	25.0
1934	42.2	27.8	1947	43.8	21.4
1935	41.3	26.4	1948	42.7	20.4
1936	44.2	28.8	1949	41.8	20.6
1937	43.4	27.1	1950	44.4	19.1
1938	43.2	26.5	1951	44.8	19.3
1939	42.0	25.9	1952	46.7	17.7
1940	41.3	26.3			

SOURCE: U.A.R. Central Agency for Public Mobilization and Statistics, General Annual Census, 1964 (Cairo: General Organization for Government Printing Offices, 1965), pp. 33-39.

from a study of total fertility rates among the Moslems and Christians in Egypt. Total fertility rate² was 6,675 among the Moslems as compared with 4,089 among the Christians.³ The Islamic religion is usually blamed for the high fertility rates prevailing among the Moslems. The teachings of the religion, if literally interpreted, could be construed to prohibit the limitation of the number of children. This is due to two factors: First, there is no direct verse in the Koran (the Holy Book of the Moslems) that sanctions or prohibits birth control. Rather, there are some verses in the Koran and sayings of the Prophet that could be interpreted as favoring large families. Second, by the end of the thirteenth century, Islamic jurisprudence and interpretation declined.

Population has a two sided characteristic. It is the source of labor and entrepreneurial inputs and it affects the demand for goods and services. An increase in population is sometimes considered advantageous because it provides an abundant supply of labor and creates purchasing power. But the increase in income and production that could be created by using the larger supply of labor may be limited by restricted supplies of other factors of production, and average output per worker may be reduced. Also, a rapidly growing population produces an increase in the number of dependents per worker and places a large demand on welfare services such as health and education.

²Total fertility rate is defined as the number of children born to a cohort of 1,000 women passed through the child bearing ages of 15 to 49 years.

³A.M. Zikry, "Fertility Differential of the U.A.R. Women," a paper contributed to the United Nations World Population Conference (Belgrade, Yugoslavia: 1965), Mimeographed, p. 7.

Education is known to be a particularly important matter in development. A study conducted by the UNESCO concludes, "a high rate of illiteracy or a large number of illiterates in the adult population, is certainly one of the handicaps of an underdeveloped or even moderately developed country."⁴ The study also revealed a high degree of correlation between the level of per capita income and the level of education.⁵ In Egypt, the percentage of total population 15 years and over that was illiterate amounted to 92.8 percent in 1907, and 86.6 percent in 1927-37. In 1947 the percentage of illiterates dropped to 80.1, and in 1950 it was estimated to be between 75 and 80 percent.⁶ The public officials estimated that the proportion of population that was economically active was about 30 percent.⁷ Thus the proportion of the dependent population represents 70 percent of the total which is a very high proportion and makes it very difficult to save and invest from low current incomes. In the United States over 40 percent of the population is normally placed in the category of economically active.

Table 3 shows the population distribution by age and sex in 1947. The number of females exceeded the number of males. This represented a disadvantage for the country, since the women did not usually play an

⁴UNESCO, World Illiteracy at Mid-Century, (Paris: 1957), p. 192.

⁵Ibid., pp. 171-173.

⁶Ibid., pp. 38 and 52.

⁷National Planning Committee for Southern Region, The Frame of the General Five-Year Plan for Economic and Social Development (July, 1960-June, 1965) (Cairo: General Organization for Government Printing Offices, 1960), p. 17.

Table 3.--Number and Percentage Distribution of Population by Age, and Sex, Egypt, 1947

Age (Years)	Male		Female		Total	
	(1,000)	(Percent)	(1,000)	(Percent)	(1,000)	(Percent)
Less than 1	258	2.7	250	2.6	508	2.7
1-4	1,022	10.9	1,055	11.0	2,077	11.0
5-9	1,209	12.9	1,191	12.4	2,400	12.7
10-14	1,142	12.2	1,071	11.2	2,213	11.7
15-19	984	10.5	917	9.6	1,901	10.0
20-24	678	7.2	706	7.4	1,384	7.3
25-29	686	7.3	787	8.2	1,472	7.8
30-34	620	6.6	690	7.2	1,313	6.9
35-39	659	7.0	654	6.8	1,135	6.9
40-44	569	6.0	566	5.9	1,135	5.9
45-49	429	4.6	415	4.3	844	4.4
50-54	421	4.5	449	4.7	870	4.6
55-59	171	1.8	173	1.8	344	1.8
60-64	252	2.7	299	3.1	551	2.9
65-69	84	0.9	82	0.9	166	0.9
70-74	108	1.1	137	1.4	245	1.3
75-over	76	0.8	100	1.1	176	0.9
Not stated	25	0.3	33	0.4	58	0.3
Total	9,392	100.0	9,575	100.0	18,967	100.0

SOURCE: U.A.R. Central Agency for Public Mobilization and Statistics, General Annual Census, 1964 (Cairo: General Organization for Government Printing Offices, 1965), p. 32.

active role in the economy until recent years. This was due to the habits and customs in the society. Also the life expectancy for females was longer than for males. The productive group from which the country draws its labor force, ages 20 to 59, represented 55.6 percent of the total. The groups from age 60 and over represented only 5.8 percent, due to low life expectancy. But 38.7 percent of all males were less than 15 years old and 49.2 percent were under 20. This high ratio in the young ages suggests the need for a large allocation of economic resources to social services as well as a high dependency ratio.

Natural Resources

Land and Water

While Egypt is well endowed with human resources, it is far less endowed with natural resources. Since the agricultural land depends upon access to water available from the River Nile, the economic importance of this water to Egypt is inestimable. It is practically the only source of water for plant and animal life as the country is almost totally lacking in rainfall, and the use of underground water by wells is in its infancy. Land and water resources are particularly important because in 1954, agriculture accounted for 35 percent of gross domestic product.⁸ While the Nile provides water for irrigation, it also produces the threat of seasonal floods that come between July and December. The remainder of

⁸United Nations, Department of Economic and Social Affairs, Statistical Yearbook, 1957 (New York: 1957), p. 487.

the country is barren desert where cultivation is impossible except for isolated sites where underground water is available.

The uniformity of the country's physical features makes it practical for agricultural purposes to divide the country into three basic zones: ⁹ Lower, Middle, and Upper Regions.

1. The Lower Region consists of the Delta proper, from Cairo northward to the Mediterranean. The bulk of berseen (a clover), cotton, maize, wheat, and nearly all the rice is produced in this area. In addition, it contains most of the country's livestock.

2. The Middle Region includes the narrow cultivated strip along the Nile from Cairo to Asyut. Basin irrigation is practiced to a limited extent. The main crops are berseen and cotton. Cattle and buffaloes are of lesser importance than in the lower region, but are in greater number than in the area to the south.

3. The Upper Region includes the narrow cultivated strip along the Nile from Asyut southward to the Sudanese border. Little water is available for crops. Nevertheless, this region grows most of the country's onions, grain sorghum, and sugar cane. Cotton, berseen, and wheat occupy important places in crop rotation. Although there are substantial numbers of sheep and camels in this area, goats are more important since they can survive on the extremely scanty vegetation.

⁹U.A.R. Information Department, The Yearbook, 1963 (Cairo: National Publication House Press, 1964), p. 4.

Egypt covers an area of 386,870 square miles, an area almost the size of Texas and New Mexico combined.¹⁰ Approximately 97 percent of the area is classified as desert or mountains. Except for the coastal plain along the Mediterranean, the section of Egypt west of the Nile is a plateau known as the Western Desert. Its nearly flat to rolling surface is interrupted in places by steep escarpments, extensive areas of sand accumulation, and depressions. Most of the area east of the Nile ranges from flat to rolling, and is bordered on the north by coastal plains. This area parallels the Gulf of Suez and the Red Sea, and it has numerous isolated peaks and ridges with crest elevations between 2,000 and 7,500 feet above sea level.

With the exception of the Nile Valley, topography is not an important factor in Egyptian agriculture. The Nile Valley between the southern boundary of Egypt and the Delta is 10 to 15 miles wide for most of its length, but in places it is less than three miles and in others, as much as 25 miles wide. The Delta fans out from Cairo and reaches a width of nearly 150 miles at the Mediterranean Sea.

Insufficient rainfall is the major physical limitation of Egyptian agriculture. With the exception of a small area farmed by nomads of the desert, all crops depend entirely upon irrigation. The average annual rainfall of the Delta along the Mediterranean coast is about eight inches. Inland, the amount falls off rapidly until at Cairo it averages

¹⁰Cline J. Warren, The Agricultural Economy of the United Arab Republic (Egypt), U.S. Department of Agriculture, Economic Research Service, Foreign Regional Analysis Division, Foreign Agricultural Economic Report No. 21 (Washington: U.S. Government Printing Office, 1964), pp. 2-4.

just over one inch a year. In the Middle Region, a light shower may fall occasionally, but in the Upper Region rain is practically unknown. The rain in Egypt falls mostly in the winter. It is generally believed that high relative humidity and heavy early morning fogs are of some importance to crop production in the Delta. The humidity has seasonal aspects; from a minimum in the spring, the early growing months of cotton, it increases throughout the growing season to a maximum in the fall months.

Egypt is characterized by a two-season year: a mild winter from November to April, and a hot summer from May to October. Spring and fall, as experienced in more temperate lands, are unknown. Crops ripen in April and May as well as in July and August. Except for variations in temperature, there is little difference between the seasons.

During the summer, the highest temperature occurs in the desert areas south of Cairo, often reaching 100° to 115°F. In the coastal region, temperatures range between a mean maximum of 100°F and a mean minimum of 45°F. As a result of the extensive desert, hot and dry winds called Khamsin are frequent, particularly in spring, and often cause much damage to crops.

The only significant agricultural soils in Egypt are confined to the narrow valley and the fan-shaped Delta of the Nile. Almost without exception, the other soils throughout the country are predominately sandy and almost entirely without organic matter. Some of these sandy soils, however, are potentially productive where water is available.¹¹

¹¹U.A.R. Central Agency for Public Mobilization and Statistics, The United Arab Republic Agriculture (Cairo: Government Printing Offices, 1964), p. 6.

For years, the soil fertility of the Nile Valley has been greatly publicized. These extremely fertile soils are of alluvial origin and were deposited before the Nile River was placed partially under control. These soils are usually rich in potash and phosphoric acid, but deficient in nitrogen. However, they are not uniform throughout and can be classified into four broad groups. The largest portion of the Delta is covered by a heavy black soil with over 50 percent clay. This soil is very fertile and deep. It becomes stiff and quite hard to work when over irrigated, but produces high yields even if too much water is applied. The second group of soils, found in the Upper Region, differs from the heavy clays of the Delta in that it is not as deep and has a lighter sandy subsoil. These black clay soils are commonly called "cotton soils" and are, by far, the most productive in Egypt. A third group of lighter loam soils is found in the extreme northeastern part of the Delta. Because of location, parts of this soil group have become salty and are in need of drainage. In areas where it is free from salt, soil of this type grows fair crops of grains and cotton. Along the edges of the desert a much lighter sandy loam, the fourth group of soils, is found. These soils are the result of winds mixing the desert lands with the clay soils in the valley. They are not as fertile as the clay soils but have excellent drainage and produce fair crop yields.

The increase in population and the increase in arable land have not been proportionate. The inhabited areas for the period 1937 to 1960 rose by only 3 percent. During the same period, with the tremendous population increase from 16 to 25 million, the density of population increased almost 69 percent. The cultivated areas, which are the source of income for the majority of the population, increased only 10

percent in the same period. Without industry to absorb the increase in population, this unbalanced growth led to disguised unemployment and low productivity of farm workers. It also reduced such services as health and education per capita which in turn reduced productivity, and depressed the level of income even further.

The most densely populated areas are those around the Delta and the Nile River where agriculture makes use of water from the Nile. Actually, a large part of the land in Egypt is desert where life rarely exists except for settlements of Nomad Arabs in the Oases, along the Mediterranean and the Red Sea, in the Sinai Peninsula, and in the Western Desert. The area of Egypt, excluding deserts, which can be called the inhabited area was 13,205 square miles in 1937, and increased to 13,668 square miles by 1960, an increase of only 3.5 percent. In 1960, the inhabited area amounted to only 3.5 percent of the total land area, and less than 1 percent of the remainder is considered to be potentially productive.

In spite of the smallness of the inhabited area, the fertile land on which cultivation is feasible is still smaller. Table 4 shows the cultivated area, population density per square mile of cultivated area, crop surface, and the ratio of crop surface to cultivated area during the period 1882 to 1960. The cultivated area, which was 7,708 square miles in 1882, amounted then to only 2 percent of the total area of Egypt. By 1960, it had increased by 22.8 percent to 9,467 square miles, or what amounted to 2.4 percent of the total area of Egypt. From this trend it is obvious that the process of land reclamation was very slow from 1882 to 1960. The major reason for this slow development is the

Table 4.--Cultivated Area, Crop Surface, and Population Density of Egypt, 1882 to 1960

Year	Cultivated area		Crop surface		Ratio of crop surface to cultivated area
	Square miles	Population density ^a	Square miles	Population density ^a	
1882	7,708	870	7,718	869	1.00
1897	8,008	1,203	9,997 ^b	964	1.25
1907	8,753	1,278	12,412	902	1.42
1917	8,617	1,476	12,813 ^b	993	1.49
1927	8,981	1,579	14,031	1,010	1.56
1937	8,555	1,861	13,540	1,176	1.58
1947	9,333	2,032	14,851	1,277	1.59
1960	9,467	2,755	16,680	1,564	1.76

^aNumber of people per square mile.

^bEstimated by interpolating from the ratios of crop surface to cultivated area between 1882, 1907, and 1927.

SOURCES: Calculated from Egyptian Federation of Industries, Yearbook, 1950-51 (Cairo: S.O.P. Press, 1956), p. 5; Central Committee for Statistics, Collection of Basic Statistics (Cairo: S.O.P. Press, 1962), pp. 11-13.

fact that cultivation depends entirely on irrigation from the Nile and is thus limited by the amount of water that can reach the land.

Since the turn of the century the crop surface, which is defined as the total acreage of crops cultivated during the year, averaged around 50 percent more than the cultivated area, and there was an upward trend. While the cultivated area increased by one-fourth during the period 1882 to 1960, crop surface more than doubled, since the Egyptian farmer can produce one to three crops a year on the same area.

Population density per square mile of cultivated area was 870 in 1882, but the density more than tripled by 1960, to 2,755 per square mile, as a result of the population pressure with no corresponding increase in land. About 99 percent of the Egyptian population lives in the Nile Valley where more than one crop can be produced on the same area of land in one year. An increase in crop acres could be considered equivalent to the increase in the cultivated area. Thus crop acres rather than cultivated area might be the better factor to use when determining the population density. In 1960, population density was 1,564 per surface compared with 2,755 per square mile of cultivated area. Thus, Egypt is one of the most densely populated agricultural countries of the world when only the arable land is considered.

Other Natural Resources

Due to the deficiency in the supply of electric power, kerosene was widely used for household purposes in addition to its use in some light industries. But most of this has been or will be changed after the High Dam electricity is developed.

Most of the deficiency in the exploration for petroleum and other minerals was due to the government policy that considered most mining and extracting industries as strategic industries which were held as government enterprises. The same state of affairs existed in the production of other materials such as phosphate, manganese, salt, and cement. Egypt is endowed with several salt mines that stretch along the Mediterranean. Salt is exported to European markets in addition to being a commodity with a considerable domestic demand. This situation was somewhat improved with the change that took place in the Mining and Quarrying Laws and Regulations in 1950. In recent years rich iron ore deposits were discovered, especially in the Aswan area.

Egypt does not have waterfalls to facilitate the generation of hydro-electric power. On the other hand, it is moderately endowed with alternative resources for power, such as oil. But until 1952, production of crude oil, gasoline, kerosene, and heavy oils, were not enough to satisfy domestic consumption. After 1952 production began to approach total consumption, and since the beginning of the 1960's, Egypt has been an exporting country. With the recent discoveries of many oil fields in the Western desert and on the Red Sea Coastal area, a possibility exists for Egypt to become one of the important countries in exporting oil.

Income

According to United Nations estimates, annual average national

product per capita for the period 1952-54 was only \$120.¹² For the purpose of comparison, Table 5 shows national product per capita for selected countries during the period of 1952-54. Egypt's national product per capita of \$120 was less than one-tenth of the per capita income in Canada and less than 7 percent of that in the United States. While per capita income in Egypt was higher than those in India and Pakistan, it was below those in Latin America. This shows the wide income gap which existed between Egypt and some of the other countries at the turn of the second half of the twentieth century, and gives an indication of the magnitude of development needed to raise per capita income to a level comparable to the more developed nations.

Data on income distribution are not available. However, the fact that agriculture was by far the largest sector and land was the major source of wealth means that income distribution probably was highly skewed in the same pattern as land ownership.

Evolution of Land Tenure and Agriculture to 1952

At the time of the Ottoman Empire, and following the conquest of Egypt by the Turks, Sultan Selim, ruler of the Turkish Empire, claimed all the land as his personal property. Then he granted large estates to the soldiers who stood by him during the war. These grants ("Riska") were made to the Princes ("Mamelukes") of Egypt who had absolute rights on such land. When Mohamed Ali came into power his goal was to become

¹²United Nations, Statistical Office, Per Capita National Product of Fifty-Five Countries, 1952-54, Statistical paper, Series E, No. 4 (New York: 1957), p. 9.

Table 5.--Per Capita National Product in Selected Countries,
in U.S. Dollars, Average 1952-54^a

Country	Per capita national product	Country	Per capita national product
U.S.A.	1,870	Argentina	460
Canada	1,310	Puerto Rico	430
Switzerland	1,010	Austria	370
New Zealand	1,000	Malaya	310
Australia	950	Union of South Africa	300
Luxembourg	890	Colombia	250
Belgium	800	Brazil	230
United Kingdom	780	Mexico	220
Denmark	750	Turkey	210
France	740	Guatemala	160
Norway	740	Egypt	120
Finland	670	Ceylon	110
West Germany	510	Pakistan	70
Netherlands	500	India	60

^aSimple arithmetic mean of annual per capita product estimates.

SOURCE: United Nations, Statistical Office, Per Capita National Product of Fifty-Five Countries, 1952-54, Statistical Paper, Series E, No. 4 (New York: 1957), pp. 8-9; United Nations, Statistical Office, National and Per Capita Income: Seventy Countries, 1949, Statistical Paper, Series E, No. 1 (New York: 1950), pp. 14-16.

the sole owner of all the land in Egypt.¹³ In 1813 he ordered a survey of all agricultural land. He then had the borders of each village traced and divided the areas of villages into plots. In the same year he published a decree according to which he became the sole owner of the land throughout the country. The principle of private property was developed later under the rule of Abbas in 1848. These rights were furthered in 1854 under Saied, and were finally affirmed in 1858 by Saied's famous statutes which declared that those who utilize the land had the right to rent, mortgage or sell it, and the heirs had the right to inherit these prerogatives without distinction of sex according to the Islamic law.

So there was a tremendous change in the land tenure system, a matter that affected the distribution of land ownership among Egyptian farmers. Table 6 shows the number and percentage distribution of land-owners by size of unit for selected years, 1896 to 1950. Table 7 shows the total acreage owned and the percentage distribution by size of unit for the same years.

The number of farmers who possessed five acres or less amounted to 611,100 in 1896 or 79.6 percent of all owners. On the other hand only 1.6 percent of the owners held 43.8 percent of the total land area. Thus there was an extreme inequality in the distribution of land. There was also a tendency toward further inequality during the first half of this century. By 1950, 93.9 percent of the land owners possessed only 33.5 percent of the total land and 66.5 percent was in the hands

¹³ Sayed Marei, Agrarian Reform in Egypt (Cairo: National House for Printing and Publishing, 1957), pp. 15-22.

Table 6.--Number and Percentage Distribution of Land Ownership by Size of Ownership Unit, Egypt, Selected Years, 1896-1950

Size of unit, acres	1896	1906	1916	1936	1950
----- (1,000 Owners) -----					
1	---	---	1,006.9	1,677.5	1,874.7
1-5	611.1	1,084.0	473.7	564.7	599.2
5-10	80.8	76.9	76.7	84.6	83.2
10-21	41.3	37.0	36.9	39.6	41.5
21-52	22.2	20.0	19.9	21.8	21.2
> 52	11.9	12.7	12.3	12.5	12.1
Total	767.3	1,230.3	1,626.3	2,400.7	2,631.9
----- (Percent) -----					
1	---	---	61.9	69.9	71.2
1-5	79.6	88.1	29.1	23.5	22.7
5-10	10.5	6.3	4.7	3.5	3.2
10-21	5.4	3.0	2.3	1.7	1.6
21-52	2.9	1.6	1.2	0.9	0.8
> 52	1.6	1.0	0.8	0.5	0.5
Total	100.0	100.0	100.0	100.0	100.0

SOURCE: Central Committee for Statistics, Collection of Basic Statistics (Cairo: S.O.P. Press, 1962), pp. 75-76; "Socio-Economic Aspects of Agrarian Reform in the U.A.R.," in Agrarian Reform and Land Development, a special issue of The Scribe, The Arab Review, Vol. VIII, July, 1964, p. 18.

Table 7.--Total Area Owned and Percentage Distribution by Size of Ownership Unit, Egypt, Selected Years, 1896 to 1950

Size of unit, acres	1896	1906	1916	1936	1950
----- (1,000 Acres) -----					
1	---	---	445.8	714.8	718.8
1-5	1,031.7	1,341.9	1,059.7	1,191.6	1,262.5
5-10	587.3	558.5	548.7	582.6	591.9
10-21	595.9	531.7	529.4	548.4	582.4
21-52	701.3	634.9	630.1	682.0	667.2
> 52	2,274.9	2,570.1	2,446.0	2,339.4	2,218.7
Total	5,191.1	2,637.1	5,659.7	6,058.1	6,104.5
----- (Percent) -----					
1	---	---	7.9	11.8	12.8
1-5	19.9	23.8	18.7	19.7	20.7
5-10	11.3	9.9	9.7	9.6	9.7
10-21	11.5	9.4	9.4	9.0	9.5
21-52	13.5	11.3	11.1	11.3	10.9
> 52	43.8	45.6	43.2	38.6	36.4
Total	100.0	100.0	100.0	100.0	100.0

SOURCE: Central Committee for Statistics, Collection of Basic Statistics (Cairo: S.O.P. Press, 1962), pp. 75-76; "Socio-Economic Aspects of Agrarian Reform in the U.A.R.," in Agrarian Reform and Land Development, a special issue of The Scribe, The Arab Review, Vol. VIII, July, 1964, p. 18.

of 6.1 percent of the owners. There was a further splitting of the small areas of less than 5.0 acres. The number of owners of 5.0 acres or less increased from 611,100 to 2,473,900, while the total area rose only from 1,031,700 to 1,981,300 acres during the period of 1896 to 1950. In 1896 and 1906 there were no reports on land holdings in the category of less than 1.0 acre. This class of farmers appeared in the 1916 data and continued to increase to amount to nearly 1.9 million by 1950.

Some persons blame the Islamic law of inheritance for the subdivision and fragmentation of land. According to this law, the inheritance should be divided among the heirs. But the land could be bought by one heir, in case it was a small unit, as long as the proceeds were distributed according to the law among the beneficiaries. The main factor that stood in the way of such transactions was the lack of a credit system.

Population pressure increased the demand on agriculture which in turn led to an increase in prices of agricultural land as the supply was very inelastic. To illustrate the high value of land, the following comparison is made. For the United States, in 1945, average value per acre of farm land was \$40.63. This amounts to about ten times the average farm wage per day in 1945, which was \$4.12. The corresponding figures for Egypt were \$690 per acre and \$0.207 average farm wage per day. This gives a ratio of 3333 for Egypt as compared with ten for the United States.¹⁴

¹⁴ Hassan A. Dawood, "Economic Aspects of Land Tenure in Egypt," Ph.D. Dissertation, Michigan State College, 1950, pp. 126-129.

In most cases, land on the large estates was rented to small farmers, who fell in one or the other of the following four classes of tenants: cash renters, cash and share renters, share renters who pay to the owners fixed amount of the product, share renters who pay to the owner a percentage of the product. The increasing demand for land with a highly inelastic supply is indicated by the rapid increase in average rent per acre over the period 1939 to 1947 (Table 8). During a period of seven years, the rent per acre more than tripled. It dropped in 1947 at the end of the second World War.

Among five of the major crops, when average annual production in 1948-52 is compared with 1934-38, cotton remained about equal, there was little change in wheat, maize declined, barley declined and rice increased (Table 9). The fact that rice production in 1951 and 1952 was approximately one-half the output in the three immediately preceding years, raises a serious question with respect to an interpretation of the increase as a trend. Fluctuations in rice production are believed to be related primarily to the water supply.

The indices of production of food products and all commodities are somewhat inconsistent with the output shown for the five crops. These two index numbers show averages for 1948-52 of 18 and 19 percent over 1934-38 (Table 10). Even so, any real growth, especially on a per capita basis, prior to 1952 is difficult to identify in the wide year-to-year fluctuations and if there was a growth rate it must have been very low. The income from agriculture depends to a large extent on the

Table 8.--Average Rent per Acre of Agricultural Land in Egypt,
1939 to 1947

Year	Average rent per acre (Dollars)	Index of rent per acre (1939=100)
1939	31	100
1940	40	129
1941	47	150
1942	67	214
1943	80	257
1944	84	271
1945	102	329
1946	102	329
1947	91	293

SOURCE: "Socio-Economic Aspects of Agrarian Reform in the U.A.R.," in Agrarian Reform and Land Development, a special issue of The Scribe, The Arab Review, Vol. VIII, July, 1964, p. 21.

Table 9.--Production of Major Crops in Egypt, Selected Periods
from 1934 to 1952

Crops	Average 1934-38	1948	1949	1950	1951	1952	Average 1948-52
-----1,000 Metric tons-----							
Cotton (lint)	400	400	391	382	363	446	396
Wheat	1,184	1,080	1,167	1,018	1,209	1,089	1,113
Maize	1,616	1,409	1,250	1,306	1,421	1,467	1,371
Barley	225	167	138	91	99	118	123
Rice (paddy)	609	1,308	1,168	1,242	1,620	517	971

SOURCE: United Nations, Department of Economic Affairs, Statistical Yearbook, 1949-50, pp. 100-115; Statistical Yearbook, 1951, pp. 91-106; Statistical Yearbook 1953, pp. 56-71 (New York: 1950, 1951, and 1953, respectively).

Table 10.--Agriculture Production Index, Egypt, from 1946 to 1952

Item	1946	1947	1948	1949	1950	1951	1952
-----1934-38=100-----							
Food products	111	112	116	115	120	120	123
All commodities	98	100	112	110	114	113	141

SOURCE: United Nations, Department of Economic Affairs, Statistical Yearbook, 1951, p. 89; Statistical Yearbook, 1953, p. 55 (New York: 1951 and 1953, respectively).

value of its major crop, namely cotton. Table 11 shows average yield per acre, prices, and total value for cotton for selected years, during the period 1920 to 1952. Much of the wide range in annual values of the total crop is due to price fluctuations. Prices are particularly dependent upon world market conditions. In order to measure any trend in normal yield per acre, the following curvilinear regression equation was used:

$$\hat{Y}_j = a + b_1 X_j + b_2 X_j^2 + e_j$$

$j = 1, 2, \dots, 32$ (code for year 1921, ... 1952;

observations are actually for the even numbered years from 1920 to 1952)

Where

\hat{Y}_j = dependent variable, estimate of the normal yield in year j , in pounds per acre

a = estimate of the intercept (or estimate of normal yield in 1920)

b_1 = estimate of coefficient of variable X

X_j = independent variable, time in years as coded.

b_2 = estimate of coefficient of variable X^2

X_j^2 = independent variable, square of X in year j

e_j = estimated residual between estimated normal and observed yield in year j , and assumed to be due to random variations in weather and other factors.

Thus, if b_1 is significant it indicates a positive or negative trend, depending on whether its sign is positive or negative, respectively. If b_2 has a positive sign it will indicate that the trend identified by b_1 is increasing at an increasing rate; a negative sign

Table 11.--Average Yield Per Acre, Average Price, and Total Value of Egyptian Cotton Crop, Selected Years, 1920 to 1952

Year	Average yield		Average price		Value of the crop ^a	
	Lbs. per acre	Index ^b	Dol. per lbs.	Index ^b	Mil. dol.	Index ^b
1920	327	100	16	100	96	100
1922	369	113	14	87	95	99
1924	403	123	18	113	132	137
1926	425	130	10	63	76	79
1928	459	140	12	75	96	100
1930	393	120	6	37	51	53
1932	448	137	6	37	31	32
1934	432	132	7	44	50	52
1936	526	161	8	50	68	71
1938	462	141	5	31	44	46
1940	539	165	7	44	65	68
1942	594	182	13	81	53	55
1944	539	165	19	119	85	89
1946	496	152	20	125	118	123
1948	611	187	26	163	226	235
1950	426	130	58	363	497	513
1952	499	153	28	175	280	292

^aValue data are in current, not constant, dollars.

^b1920=100.

SOURCE: Department of Statistics and Census, The Statistical Yearbook, 1959 (Cairo: Government Press, 1960), pp. 250-251.

for b_2 will indicate that the trend is increasing at a decreasing rate; and, if the sign for b_2 is not significantly different from zero, a linear trend at the rate of the value of b_1 is indicated.

The coefficients were estimated by means of least squares and the following estimates of the coefficients and their standard errors, as given in parenthesis, were obtained:

$$\hat{Y} = 328.929 + 15.553 X - 0.313 X^2 + e$$

$$(4.667) \quad (0.141)$$

Using the t test, b_1 is significant as the .01 level as indicated by values of 3.332 and 2.947 for the calculated and tabular values of t, respectively.

Because of the relationship existing between X and X^2 , i.e., X cannot be changed without changing X^2 or vice versa, the analysis of variance, and F test used to test the null hypothesis,

$$H_0: B_2 = 0$$

is a test of whether the addition of a squared term to the regression equation adds significantly to the sum of squares due to regression. 15

¹⁵For more details on tests of significance in regression analysis, see Thomas E. Tramel, "Advanced Statistics for Agricultural Economists," Unpublished manuscript, Mississippi State University, pp. 59-227; J. Johnston, Econometric Methods (New York: McGraw-Hill, 1963), pp. 106-136.

Table 12.--Trends in Cotton Yields: Analysis of Variance to Test Individual Regression Coefficients or Groups of Regression Coefficients Considered as a Whole, Egypt, 1920-1952

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Squares
Total	16	96472.0	-
Due to regression			
$Y = a + b_1 X + b_2 X^2$	2	62086.1	31043.1
Due to regression			
$Y = a + b_1 X$	1	49016.9	-
Difference	1	13069.2	13069.2
Deviation from regression			
$Y = a + b_1 X + b_2 X^2$	14	34385.9	2456.1

$$F = \frac{MSd}{MSD} = \frac{SSd/k}{SSD/(n-p-1)}$$

Where

$$SSd = SSR_1 \text{ (Sum of squares due to regression)}$$

$$Y = a + b_1 X + b_2 X^2 -$$

$$SSR_2 \text{ (Sum of squares due to regression)}$$

$$Y = a + b_1 X$$

$$SSD = y^2 \text{ (Total sum of squares)} - SSR_1,$$

$k =$ number of variables being deleted from complete regression,

n = number of observations,
and p = number of independent variables.

For b_2 the calculated value of F is 5.32, while the tabular value of F_(1,14) is 4.60 at the .05 level of significance. The tabular value of F_(2,14) is 6.51 at the .01 level of significance. Thus the whole regression results are significant at the .01 level.

The F test for the whole equation is:

$$F = \frac{MSR}{MSD} = \frac{SSR/p}{SSD/(n-p-1)}$$

$$F = \frac{31043.1}{2456.1} = 12.639$$

From the above estimates and tests, it was concluded that there was a significant upward trend in average annual yields per acre of cotton during 1930 to 1952 and that this trend was increasing at a decreasing rate. According to this estimated equation, the maximum normal yield would occur in 1945 (X = 25), at a level of 525 pounds per acre compared with estimated normal yield of 329 pounds per acre in 1920.

Economic Development and Growth of the Other Sectors
of the Economy Prior to 1952

Although the 1952 Revolution and the determination of the new administration to change the political and economic framework of the economy marks the beginning of the recent development period, the Egyptian economy was exposed previously to several shocks, each of which might have succeeded in launching the economy on a development path. Actually, such shocks were not of sufficient size or were not broad enough to push the economy into self-sustained growth. Nevertheless,

these shocks served to prepare the economy for development after 1952.

Mohamed Ali became the ruler of Egypt in 1805, while it was still part of the Turkish Empire. He tried to achieve political independence from the Turkish Empire by building a strong army. Since national industries were required to equip a strong army, he started to develop the Egyptian economy to make it self sufficient.¹⁶

Mohamed Ali's program called for the simultaneous development of both agriculture and industry. The latter was regarded as the best outlet for agricultural products, while at the same time it would reduce the dependence of the economy on outside markets. He attempted the industrialization of Egypt with emphasis on textile manufacturing.¹⁷ His program was based on Government ownership of the small industries which he created in all parts of the country. The Government provided all inputs to the manufacturing units which in turn sold their output to the Government. However, the attempt met with little success. It came to an end in 1840 after Mohamed Ali's military defeat. Several conditions contributed to this failure. Most important were the high cost, lack of supervision, and waste initiated with the centralization policy adopted in managing the industries. In addition, there was little protection

¹⁶ M. M. El-Kammash, Economic Development and Planning in Egypt (New York: Frederick A. Praeger, 1967), p. 39.

¹⁷ He established 25 cotton mills with 500 workers in each.

of domestic industries against imported products, only a uniform tariff of 3 percent ad valorem on all imports.¹⁸

Mohamed Ali's successor found that state monopoly over industry was an obstacle to foreign trade, especially to Egypt's main crop, cotton, which was already widely used in European industries. Thus, during this period, there was a shift towards improvement of transportation. The first railway system was built during this period as well as canals and other waterways. The Suez Canal, a vital international waterway, was opened for navigation in 1869. This did not help, however, to promote local industries. In fact, if the order of these two stages, i.e., Mohamed Ali's period and that of his successors, had been reversed, possibly it would have set the Egyptian economy on the same development path which some of the European countries embarked on at that time. Building of the infrastructure of the economy could have helped the economy to embark on its development path, but such development was abortive. The financial troubles resulting from the building and opening of the Suez Canal forced the Government to borrow from foreign bankers. Hence the Government was left without any capital to initiate or even stimulate industrial growth.¹⁹ In the meantime, these circumstances established conditions that resulted in British occupation in 1882. Egypt then became a colonial agricultural unit of the British Empire.

¹⁸M. M. El-Kammash, "On the Take-Off Stage of the U.A.R. Economy," Arab Journal, Vol. II, No. 4, Fall, 1965, p. 12.

¹⁹Ahmed El-Hitta, Economic History of Egypt (Cairo: Dar Nashr El-Sakafa, 1957), pp. 173-174.

The British managed to keep Egypt as a source of cotton, an important material of their textile industries, and as a market for their manufactured products, mainly textiles. This unsuccessful experience of industrialization brought with it the conviction that Egypt is the gift of the River Nile. It suggested that by its nature it should remain an agricultural country; it did not possess the requirements for industry.

That concept lasted until the beginning of the twentieth century. With the first World War, however, Egypt entered a new phase of economic change. The difficulty of importing and exporting, which resulted from the war, compelled the country to depend upon its own resources in supplying substitutes for the goods and services that had been imported. This led to the initiation of some local industries under the leadership of Bank Misr which was established in 1920 with domestic capital.

In summary, five phases in the Egyptian economy's development can be identified.²⁰ (1) An industrialization period began in 1805, but had declined by the middle of the century and ended with the military defeat of Mohamed Ali. (2) A period characterized by the improvement in transportation began in 1840 and ended by the financial troubles as a result of the costs incurred in construction of the Suez Canal and the British occupation in 1882. (3) A period in which Egypt was predominantly an agrarian economy under the British Empire lasted until the beginning of the first World War. (4) A period of industrialization, dependent on domestic capital, was initiated by Bank Misr and

²⁰El-Kammash, Economic Development and Planning, pp. 45-46.

affiliated industries after the first World War. This movement managed to bring about legislation favorable to the establishment of new industries and protection of important ones. It also paved the way for the prosperity during the second World War. (5) The fifth period was one of stagnation, following the second World War, and lasted until 1952. The recent development period began in 1952, following the changes in the form of government.

National Income at constant prices (1953) has fluctuated widely from year-to-year. On the average, however, the rate of growth in national income just about equaled the population growth rate between the late 1930's and 1952 (Table 13).

During 1951 and 1952 there were large negative rates due to the political instability. Until 1930, trade agreements with foreign countries gave them the privilege of exporting to and importing from Egypt with little or practically no customs and the government of Egypt was prevented from helping infant industries. By 1937, however, the government had managed to terminate all such foreign privileges, according to the 1937 treaty, and had become able to impose direct taxes on imports for the first time.²¹

Although the 1930's depression affected the Egyptian economy, the creation of those few industries after the first World War, along with the legislation mentioned above, paved the way for the change which came with the second World War. Then, again, war stopped the importation of many commodities which the economy had depended upon (mainly

²¹El-Hitta, op. cit., pp. 173-174.

Table 13.--Population, National Income, and Growth Rates, Egypt,
1937 to 1952

Year	Number	Population		National income at 1953 prices			
		Change from preceding year	Total (Million dollars)	Total	Per capita	Change from preced- ing year	
				(Dollars)	(Percent)	Total	Per capita
		(Million)	(Percent)				
1937	15.9	-		1,310	82	-	-
1938	16.3	2.35		1,317	81	0.5	-1.8
1939	16.6	1.80		1,287	78	-2.3	-4.0
1940	16.9	1.80		1,186	70	-7.8	-9.4
1941	17.2	1.79		1,154	68	-1.8	-3.5
1942	17.5	1.80		1,271	73	9.1	7.2
1943	17.8	1.80		1,196	67	-5.9	-7.6
1944	18.1	1.80		1,212	67	1.4	-0.4
1945	18.5	1.80		1,242	67	2.4	0.6
1946	18.8	1.80		1,418	75	14.2	12.1
1947	19.0	0.93		1,677	88	18.3	17.2
1948	19.5	2.78		1,731	89	3.2	0.5
1949	19.9	2.02		2,044	103	18.1	15.7
1950	20.4	2.54		2,070	102	1.3	-1.2
1951	20.9	2.35		2,056	98	-0.7	-3.0
1952	21.6	3.41		1,766	82	-14.1	-16.9

SOURCE: U.A.R. Department of Statistics and Census, Statistical Yearbook, 1959 (Cairo: Government Press, 1961), pp. 23-24; United Nations, Department of Economic Affairs, Statistical Yearbook, 1956 (New York: 1956), p. 45; U.A.R. Central Committee for Statistics, Collection of Basic Statistics (Cairo: S.O.P. Press, 1961), pp. 239-240.

manufactured products). In addition, armed forces stationed in Egypt required large amounts of consumer goods. This situation encouraged and made profitable the creation of several small industries. One industry which flourished during the war period, and continued to flourish thereafter was the textile industry and all its connected processes.

It is true that the second World War brought some prosperity to the nation's economy in the industries created by the demands of the armed forces stationed in Egypt. Employment and prices increased. After the war the high level of employment could not be maintained. Industries created by war could not survive. The textile industry was an exception. This industry which had begun in the early 1920's grew stronger during the war period. Primarily because of the vertical expansion of this industry, it managed to survive after the war. However, it did not spread any appreciable or noticeable effects into other sectors of the economy.

With the end of the war, the Egyptian economy entered another phase. Most of the countries which were involved directly or indirectly in the war, and even those which were almost totally destroyed, embarked on programs of development and reconstruction. The Egyptian economy suffered from inflation, an increase in population, and unemployment. The cost of living tripled between 1945 and 1951. While substantial growth in income occurred from 1946 to 1950, a sharp reduction occurred thereafter.

Chapter III

ECONOMIC DEVELOPMENT AND GROWTH DURING 1952 TO 1960

Institutional Changes

There is no doubt that the 1952 Revolution succeeded in initiating simultaneous development in the economic, social, and political structures during the first few years following the revolution. Several measures were taken to prepare the economy for the developmental process. Apart from the political reform which came with the new administration, several pieces of social and economic legislation have been enacted since 1952.¹ In the agricultural sector, the Agrarian Reform Law, which was issued in 1952, limited land ownership to a maximum of 208 acres. The Permanent Council for the Development of National Production was established in 1952 with the purpose of studying the feasibility of developmental projects. The Permanent Council for Welfare and Social Services also attempted to change the social structure of the farm people by building schools and by providing clinics, welfare, and recreation services. New labor laws provided for the placement of unemployed workers, vocational training, collective

¹ U.A.R. Information Department, The Yearbook, 1963 (Cairo: National Publication House Press, 1964), pp. 142, 70, 171, 183-186.

bargaining, and the employment of women and minors. The Social Insurance Act brought all workers under coverage of the social insurance plan. In addition, the newly adopted constitution in 1956 outlined the socialistic framework of the economy and stipulated planning as an instrument for future development. With this constitution, the nation entered the planning phase of its economy. Article 7 declares that, "National economy is to be organized according to plans, which conform to principle of social justice, and which aim at promoting national productivity and raising the standard of living."² Private economic activity was conditioned by the stipulation of Article 8 that, "Private economic activity is free from state interference provided that it does not prejudice public interests or endanger the people's security or infringe upon their freedom and dignity."³ It also put in the hands of the State the welfare function. According to Article 17, "The state endeavors to secure a decent living standard for every citizen, with the aim of providing food, housing, health, cultural and social services for all."⁴ Article 26 proclaimed, "Natural resources, whether subterranean or in territorial waters, are the property of the state which administers it, taking into account the exigencies of national defense and national economy."⁵ Having declared the public ownership of

² Egypt, Constitution (1956), Article 7, Section 2.

³ Ibid., Article 8.

⁴ Ibid., Article 17.

⁵ Ibid., Article 26.

natural resources, the constitution also stipulated state control over labor. According to Article 53, state regulation of labor included limitation of working hours, determination of wage scales, insurance against work injuries, and arrangements concerning holiday and leisure hours.⁶

The period 1952 to 1957 witnessed a rapid growth of the public sector. The "Egyptianization Laws,"⁷ which were promulgated after the Suez Crisis, led to the acquisition by the State of substantial interests in several banks and insurance, commercial, and industrial companies. This action materialized in the creation of the Economic Development Organization (EDO), which essentially was a holding enterprise owning interests in a very wide range of economic activities.

After the United Arab Republic was formed with the Union of Egypt and Syria on February 21, 1958, the U.A.R. constitution was promulgated, and did not differ essentially from the 1956 constitution with respect to the economic and social structure. It stated that social solidarity is the basis of society, planning is the basis for economic organization, and that private property is inviolable.⁸ In order to

⁶Ibid, Article 53.

⁷The Egyptianization Laws for the banks provide that the banking business may be conducted only by Egyptian joint-stock companies. The paid-up capital should not be less than \$1.15 million owned by Egyptians. The board of directors as well as managers should be Egyptians. The same regulation applied to all insurance enterprises and all Egyptian joint-stock companies.

⁸United Arab Republic, Constitution (1958), Articles 3, 4, 5, and 6, Section 2.

complete the transformation to a socialist economy and to increase the Government's role, several other holding enterprises, in addition to EDO, were created. These establishments included the Misr Organization, El-Nasr Organization, Petroleum Authority, the Public Organization for Internal Transport, and the Public Organization for Desert Reclamation.

Industry

After 1952, there was a systematic drive for development with emphasis on the industrial sector. A Ministry of Industry was established in 1956. In the meantime, the Industrial Bank, established in 1949, expanded its loan operations, and engaged in the promotion of industries and in studying the industrial structure. In 1953, the bank was reorganized with the objective of playing a larger role in the development of the country. In January, 1957, the State decided to speed-up industrialization by adopting a 5-year Plan. The first steps in its execution were taken in July, 1957. The aim of the Plan was to raise the productivity of existing industries, and to establish new industries. The planned total public investment was about \$690 million, and the largest share of this was to be allocated to manufacturing industries.⁹ In 1958 the decision was made to develop the economy according to a general Plan. Therefore, the original industrial Plan was shortened to three years, and beginning in 1960 the industrial sector was incorporated into the 10-year general Plan (1961-1970).

⁹ Arab Information Center, Digest of Major Arab Issues (New York: 1959), pp. 33-34.

There is very little data on investment in industry prior to 1952. During the eight years from 1952 to 1959 several measures were taken to attract both domestic and foreign capital. However, other factors were operating which affected the flow of investment and foreign capital into the economy. The 1956 crisis, and the nationalization movement which started by nationalizing the Suez Canal Company, not only stopped foreign capital from flowing into Egypt, but also resulted in the flight of capital out of the country. During this period the Government stepped into the sphere of economic activities and undertook several investments, either directly through Government organizations established especially for this purpose and to manage the nationalized industries, or indirectly by participation through investments in private enterprise.

Government investments in industry and electricity at current prices during the years 1953 to 1960 were as follows:¹⁰

<u>Year</u>	<u>Million dollars</u>
1953	81.2
1954	88.5
1955	94.1
1956	135.1
1957	92.9
1958	99.5
1959	125.3
1960	127.6

Thus, annual investment in industry and electricity was increased by 57 percent between 1953 and 1960.

¹⁰Department of Statistics and Census, Ten Years of the Revolution: Statistical Atlas (Cairo: S.O.P. Press, 1962), p. 21.

Income from industry and electricity at current prices, in the fiscal years of 1953 to 1960 was as follows:¹¹

<u>Year</u>	<u>Million dollars</u>	<u>Percent increase from preceeding year</u>
1953	292.1	-
1954	322.0	10.2
1955	356.5	10.7
1956	391.0	9.7
1957	441.6	12.9
1958	501.4	13.5
1959	552.0	10.1
1960	618.7	12.1

Capital/output ratio for industry and electricity during the period was 2.33 at current dollars. Thus, income generated by this investment averaged 43 percent. This rate should not be interpreted as a rate of return on investments as payments to labor have not been deducted.

Table 14 shows by size of firm, based on number of workers, the distribution of industrial establishments, number of persons employed, total value added, and value added per worker for selected years during the period 1952 to 1960.

There was a total of 26,743 industrial establishments in 1947¹² and the dominant number of establishments must have had fewer than 10 employees. But small firms dominate only in terms of numbers, and not in terms of total employment or value of output. Within the industrial firms with 10 employees or more, those with 500 or more workers employ

¹¹ Ibid., p. 18

¹² Ibid., p. 205.

Table 14.--Number of Industrial Establishments, Employment, Value of Raw Materials and Products, and Value Added, Classified by Number of Workers per Establishment for Establishments with 10 or more Employees, Egypt, 1952 to 1960

Workers per Establishment	Year					1960 as percent of 1952
	1952	1954	1956	1958	1960	
-----Number of establishments-----						
10-49	2,734	2,997	2,838	2,549	2,562	94
50-499	630	717	608	613	674	107
500 or more	<u>76</u>	<u>67</u>	<u>66</u>	<u>71</u>	<u>100</u>	<u>132</u>
Total	3,440	2,781	3,512	3,233	3,336	97
-Number of workers employed, thousands-----						
10-49	53.4	60.2	57.2	54.9	55.2	103
50-400	90.0	95.6	79.5	81.3	99.1	110
500 or more	<u>127.5</u>	<u>117.7</u>	<u>125.1</u>	<u>127.5</u>	<u>183.8</u>	<u>144</u>
Total	270.9	273.5	261.8	263.7	338.1	125
Value of raw materials and fuel used, million dollars-----						
10-49	88.7	105.4	114.2	143.9	151.2	170
50-499	134.0	138.3	158.3	178.0	194.3	145
500 or more	<u>229.3</u>	<u>280.2</u>	<u>225.3</u>	<u>319.4</u>	<u>413.2</u>	<u>180</u>
Total	452.0	523.9	497.8	641.3	758.6	168
-----Depreciation, ^a million dollars-----						
10-49				2.4	2.1	
50-499				8.0	9.7	
500 or more				<u>24.0</u>	<u>40.8</u>	
Total				34.4	52.6	

Table 14.--(cont)

Workers per establishment	Year					1960 as percent of 1952
	1952	1954	1956	1958	1960	
-Value of products, million dollars-						
10-49	110.8	131.6	141.3	187.8	179.6	162
50-499	189.9	201.0	230.3	272.4	319.6	168
500 or more	<u>329.6</u>	<u>402.6</u>	<u>390.8</u>	<u>500.6</u>	<u>634.2</u>	<u>192</u>
Total	630.3	735.2	762.4	960.8	1,133.4	180
--Total value added, million dollars--						
10-49	22.1	26.1	27.1	41.5	26.3	119
50-499	55.8	62.7	72.0	86.5	115.6	207
500 or more	<u>100.3</u>	<u>122.4</u>	<u>165.5</u>	<u>157.2</u>	<u>180.2</u>	<u>180</u>
Total	178.2	211.2	264.6	285.2	322.1	181
Change from preceding year:						
Percent	-	18.5	25.3	7.8	12.9	-
Million dollars	-	33.0	53.4	20.6	36.9	-
---Value added per worker, dollars---						
10-49	413	435	474	755	477	115
50-499	620	656	905	1,064	1,167	188
500 or more	<u>786</u>	<u>1,040</u>	<u>1,323</u>	<u>1,232</u>	<u>980</u>	<u>125</u>
Average	657	772	1,011	1,081	953	145
Percent change from preceding year in average value added		17.5	31.0	6.9	-11.8	-

^aData were not available prior to 1958.

SOURCE: U.A.R. Central Agency for Public Mobilization and Statistics, Basic Statistics, 1964 (Cairo: Government Printing and Publishing Houses, 1965), pp. 122-123.

more than half the total workers and produce more than half the total value added (Table 15). There was no definite trend in size of firms. Total value added, for each size-group of firms, was higher in each other year in comparison with 1952. In 1958 compared with 1952, value added by firms with 10 to 49 workers had increased by 88 percent, but dropped to 19 percent in 1960. Since the price index rose from 432 to 460 (1939=100) between 1952 and 1960,¹³ about 6 percent of the increase in value is attributed to price increases. It is quite clear, however, that substantial and significant increases occurred in total value added between 1952 and 1960. On the other hand, the only important change in number of workers occurred between 1958 and 1960 in the category of firms that employed 500 workers or more.

Value added per worker increased significantly in each of the three groups of establishments (Table 14). However, in the group with 10 to 49 workers, value added per worker dropped from \$755 in 1958 to \$477 in 1960. Also, in the class of 500 or more workers, value added per worker reached a peak of \$1,323 in 1956, an increase of 69 percent over 1952, and then dropped to \$980 in 1960, an increase of only 25 percent over 1952.

It is interesting to note that the value added per worker was lower in the 10-49 worker category than in the other two. But the fact that the different categories are probably made up of different types of industries reduces their comparability for the purpose of determining relative efficiencies.

¹³U.A.R. Central Agency for Public Mobilization and Statistics, Basic Statistics, 1964 (Cairo: Government Printing and Publishing Houses, 1965), p. 220.

Table 15.--Changes in the Distribution of Number of Establishments, Employment, Value of Products, and Value Added, Among Establishments Classified by Number of Workers, Egypt, 1952 to 1960

Workers per establishment	Percentages of totals							
	Number of establishments		Number of workers		Value of products		Value added	
	1952	1960	1952	1960	1952	1960	1952	1960
10-49	79.5	76.8	19.7	16.3	17.6	15.8	12.4	8.2
50-499	18.3	20.2	33.2	29.3	30.1	28.2	31.3	35.9
500 or more	2.2	3.0	47.1	54.5	52.3	56.0	56.3	55.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

SOURCE: Calculated from data in Table 14.

Two major factors were behind the expansion of industry during the 1950's. First, the Suez crisis created several shortages which caused the government to encourage industrial production in order to ease the supply difficulties. Second, in January 1957 the 5-year industrialization Plan was approved and initiated for the period 1957-61. This expansion materialized in the form of a large number of new industries, and in the expansion of the existing ones.

Agriculture During 1952 to 1960

Changes in Acreage, Production, and Yields

In this section the discussion is concentrated on the changes in acreage, yields and production in order to identify and explain the trends. In this period, cultivated area was increased 184 thousand acres or 3 percent (Table 16). This limited increase is due to the fact that the land which could be cultivated depended upon the available water supply from the River Nile and the rate at which irrigation projects were developed. The supply of arable land also depended upon the implementation of land reclamation projects. The quantity reclaimed in 1960 amounted to 29.3 thousand acres.¹⁴

Multiple cropping during the year is a means of using the limited cropland more intensively. There was a substantial increase, from 1952 to 1955, when crop acreage as a percentage of cropland increased from 163 to 177.

¹⁴ U.A.R. Central Agency for Public Mobilization and Statistics, General Annual Census, 1964 (Cairo: General Organization for Government Printing Offices, 1965), p. 70.

Table 16.--Cultivated Area and Crop Area, Egypt, 1952 to 1960

Year	<u>Cultivated area</u>		<u>Crop area</u>		
	Area (1,000 Acres)	Index (1952=100)	Area (1,000 Acres)	Percent of cultivated area (Percent)	Index (1952=100)
1952	5,918	100	9,617	163	100
1953	5,932	100	9,724	164	101
1954	5,963	101	10,275	172	107
1955	5,963	101	10,507	176	109
1956	5,991	101	10,320	172	107
1957	6,052	102	10,704	177	111
1958	6,065	103	10,742	177	112
1959	6,087	103	10,687	176	111
1960	6,102	103	10,792	177	112

SOURCE: U.A.R. Central Agency for Public Mobilization and Statistics, Basic Statistics, 1964 (Cairo: Government Printing and Publishing Houses, 1965), p. 82.

The crop area in 1956 decreased due to the Suez crisis. The decline in 1959 was due to the fact that the quantity of water stored from the Nile was less than the level in 1958. Thus there appears to be little if any change in intensity of cropland use between 1955 and 1960. However, the intensity level of 177, reached during this period, is substantially higher than the 156 to 159 level that prevailed between 1927 and 1947 (Table 4).

Table 17 shows cotton production, acreage, and yields per acre in Egypt during 1952 to 1960. There was a large decline in the area in cotton in 1953 compared to the 1950-52 average. This reduction is attributed to more strict enforcement of the law that restricted cotton to an upper limit of one-third of any farmer's land. Afterward the acreage was increased and by 1960, it was only 5.1 percent below the 1950-52 average. Part of this increase resulted from the increase in the total cultivated area of land, and part was due to the fact that some of the farmers continued to cultivate cotton in excess of one-third of their total acreage.

While yield of cotton per acre from 1953 to 1960 averaged 12.4 percent higher than the 428 pounds in 1950-52, it was still below the average of 508 pounds for the even numbered years of 1946 to 1952, and below the estimated normal maximum yield of 525 pounds in 1945, as found earlier by the regression equation for the 1920 to 1952 period. The increase in yields after 1956 is believed to have been due to more effective methods of pest control, the use of improved seeds, and larger quantities of fertilizers, rather than to random variation. However, the data at the national level cannot be interpreted as a

Table 17.--Cotton Lint: Production, Acreage, and Yield, Egypt, 1950 to 1960

Year	Production		Acreage		Yield	
	Total	Change from 1950-52	Total	Change from 1950-52	Per acre	Change from 1950-52
	(1,000 Metric tons)	(Percent)	(1,000 Acres)	(Percent)	(Pounds)	(Percent)
1950-52 (ave.)	397	-	2,049	-	428	-
1953	318	-19.9	1,374	-32.9	509	18.9
1954	348	-12.3	1,639	-20.0	467	9.1
1955	334	-15.9	1,885	-8.0	390	-8.9
1956	325	-18.1	1,716	-16.3	417	-2.6
1957	405	2.0	1,888	-7.9	474	10.7
1958	446	12.3	1,977	-3.5	498	16.4
1959	457	15.1	1,827	-10.8	551	28.7
1960	478	20.4	1,944	-5.1	542	26.6
1953-60:						
mean	389	-	1,781	-	481	-
s.d. ^a	65	-	200	-	56	-

^aStandard deviation.

SOURCE: U.A.R. Central Agency for Public Mobilization and Statistics, Basic Statistics, 1964 (Cairo: Government Printing and Publishing Houses, 1965), pp. 86-88.

sustained upward trend in cotton production that could be necessarily expected to continue. Both production and yield in 1950-52 fall within the range of one standard deviation of the means for 1953-60.

Both acreage and yield of wheat, and consequently production, increased in 1953 and 1954 over the 1950-52 averages. Thereafter, acreage declined and yields remained stable (Table 18). From 1955 to 1960, no trend appeared in production. Both production and yield of wheat in 1950-52 are more than two standard deviations from the means of 1953-60. Thus, there is a high probability that there were significant increases in yield and production during the 1953-60 period. In addition to rainfall during the winter season, variations in production of wheat depend upon damages by the Kamasin wind during the ripening season.¹⁵

Acreage of maize increased in 1953 but declined thereafter and for the 1953 to 1960 period it averaged 16.9 percent above the 1950-52 period (Table 19). Changes in yield were no different from what would be expected as random variations. Thus no sustained trend appeared in the maize enterprise. Variations were due primarily to differences in acreage rather than yield. While hybrid corn was produced on a commercial basis in 1957, there were offsetting effects of severe attacks by insects in 1957 and 1959.

Both acreage and yield of rice decreased in 1953 in comparison with 1950-52. These decreases were followed by sharp increases in

¹⁵A sandy storm that comes into Egypt from the northwest during April and May.

Table 18.--Wheat: Production, Acreage, and Yield, Egypt, 1950 to 1960

Year	Production		Acreage		Yield	
	Total (1,000 Metric tons)	Change from 1950-52 (Percent)	Total (1,000 Acres)	Change from 1950-52 (Percent)	Per acre (Pounds)	Change from 1950-52 (Percent)
1950-52 (ave.)	1,105	-	1,478	-	1,647	-
1953	1,547	40.0	1,858	25.7	1,836	11.5
1954	1,729	56.5	1,863	26.0	2,046	24.2
1955	1,451	31.3	1,581	7.0	2,024	22.9
1956	1,547	40.0	1,630	10.3	2,092	27.0
1957	1,467	32.7	1,572	6.4	2,057	24.9
1958	1,412	27.8	1,479	0.1	2,105	27.8
1959	1,443	30.6	1,531	3.6	2,079	27.4
1960	1,499	35.7	1,511	2.2	2,187	32.7
1953-60:						
mean	1,512	-	1,628	-	2,053	-
s.d. ^a	100	-	151	-	101	-

^aStandard deviation.

SOURCE: U.A.R. Central Agency for Public Mobilization and Statistics, Basic Statistics, 1964 (Cairo: Government Printing and Publishing Houses, 1965), pp. 86-88.

Table 19.--Maize: Production, Acreage, and Yield, Egypt,
1950 to 1960

Year	Production		Acreage		Yield	
	Total (1,000 Metric tons)	Change from 1950-52 (Percent)	Total (1,000 Acres)	Change from 1950-52 (Percent)	Per acre (Pounds)	Change from 1950-52 (Percent)
1950-52 (ave.)	1,411	-	1,664	-	1,870	-
1953	1,853	31.3	2,092	25.7	1,953	4.4
1954	1,753	24.2	1,976	18.8	1,955	4.5
1955	1,714	21.5	1,904	14.4	1,984	6.1
1956	1,652	17.1	1,906	14.5	1,911	2.2
1957	1,495	6.0	1,836	10.3	1,795	-4.0
1958	1,758	24.6	2,029	21.9	1,909	2.1
1959	1,500	6.3	1,930	16.0	1,713	-8.4
1960	1,691	19.8	1,890	13.6	1,973	5.5
1953-60:						
mean	1,677	-	1,945	-	1,899	-
s.d. ^a	125	-	83	-	96	-

^aStandard deviation.

SOURCE: U.A.R. Central Agency for Public Mobilization and Statistics, Basic Statistics, 1964 (Cairo: Government Printing and Publishing Houses, 1965), pp. 86-88.

1954 and a further increase in yield in 1955 (Table 20). Thereafter, both acreage and yields were relatively stable with the exception of the low acreage in 1958. The increase in acreage was brought into production as a result of expansion of irrigated area.

Yield of onions per acre show a significant upward shift in 1957 to 1960 over the preceding years (Table 21). Acreage increased substantially in 1954, 1955, and again in 1959. Thus, there appear to have been significant upward shifts in onion production as a result of increases in acreage as well as in yield. An analysis of variance showed both yields and production, in 1957 to 1960 compared with 1953 to 1956, to be significantly higher at the .01 level.

Changes in Policies, Organizations, and Inputs

Major changes in the Country's agricultural policies, organizations, and administrations occurred during the 1952 to 1960 period. After the establishment of the Permanent Council for the Development of National Production in 1952, there was the implementation of the Agrarian Reform Law of September 9, 1952, for the declared purpose of increasing the welfare of the people through the redistribution of agricultural land. The law set a maximum limit of ownership at 208 acres. Meanwhile, the proprietor was given the right to retain 104 acres more for his children provided the total did not exceed 312 acres.¹⁶ Associations and joint stock companies were exempted from

¹⁶ Sayed Marei, Agricultural Land Reform and the Population Problem in Egypt (Cairo: National House for Printing and Publishing, 1964), p. 97.

Table 20.--Rice: Production, Acreage, and Yield, Egypt,
1950 to 1960

Year	Production		Acreage		Yield	
	Total (1,000 Metric tons)	Change from 1950-52 (Percent)	Total (1,000 Acres)	Change from 1950-52 (Percent)	Per acre (Pounds)	Change from 1950-52 (Percent)
1950-52 (ave.)	793	-	541	-	3,240	-
1953	625	-21.2	439	-18.9	3,131	-3.3
1954	1,118	41.0	633	17.0	3,902	20.4
1955	1,244	56.9	623	15.2	4,409	36.1
1956	1,495	88.5	716	32.3	4,608	42.2
1957	1,623	104.7	759	40.3	4,718	45.6
1958	1,027	29.5	538	- 0.6	4,365	34.7
1959	1,535	93.6	757	39.9	4,475	38.1
1960	1,486	87.4	733	35.5	4,475	38.1
1953-60:						
mean	1,264	-	650	-	4,260	-
s.d. ^a	336	-	115	-	515	-

^a Standard deviation.

SOURCE: U.A.R. Central Agency for Public Mobilization and Statistics, Basic Statistics, 1964 (Cairo: Government Printing and Publishing Houses, 1965), pp. 86-88.

Table 21.--Onion: Production, Acreage, and Yield, Egypt,
1950 to 1960

Year	Production		Acreage		Yield	
	Total (1,000 Metric tons)	Change from 1950-52 (Percent)	Total (1,000 Acres)	Change from 1950-52 (Percent)	Per acre (Pounds)	Change from 1950-52 (Percent)
1950-52 (ave.)	277	-	37	-	16,513	-
1953	304	9.7	38	2.7	17,637	6.8
1954	380	37.2	48	29.7	17,461	5.7
1955	415	49.8	53	43.2	17,262	4.5
1956	403	45.5	50	35.1	17,769	7.5
1957	482	74.0	54	45.9	19,687	19.2
1958	463	67.1	54	45.9	18,894	14.4
1959	558	101.4	61	64.8	20,172	22.2
1960	545	96.8	61	64.8	19,687	19.2
1953-60:						
mean	444	-	52	-	18,571	-
s.d. ^a	86	-	7	-	1,172	-

^aStandard deviation.

SOURCE: U.A.R. Central Agency for Public Mobilization and Statistics, Basic Statistics, 1964 (Cairo: Government Printing and Publishing Houses, 1965), pp. 86-88.

the 104 acres limitation in order to encourage reclamation of additional land by these private enterprises. Compensation for the expropriated land was set at a price equivalent to 10 times the rental value (rental value was seven times the land tax) of the land in addition to the value of the mobile and fixed assets. Compensation was to be paid by the Government in the form of State bonds bearing 3 percent interest redeemable in 30 years. The land reform law also provided for the establishment of agricultural cooperatives by land owners owning less than five acres each. These cooperatives, whose membership was compulsory, were to provide farmers with credit, seeds, fertilizers, and farm machinery in addition to marketing their products. A minimum daily wage of 37 cents was also fixed by this law for agricultural workers, and workers were given the right to form labor unions. A maximum annual rent per acre was set, and the rental value was not to exceed seven times the original land tax.

The redistribution of land proceeded simultaneously with the land acquisition program. The expropriated areas were to be sold by the Government to new owners who were to pay the price of the land in 40 years. In addition to the compensation paid to the previous owners, the selling price included 15 percent to cover the cost of requisition and administrative expenses plus 3 percent annual interest. One of the most important measures provided by that law was a safeguard against future subdivision of land by inheritance to less than units of five acres. This safeguard was necessary since the Moslem rule would result in an extreme subdivision of land after one or two generations.

Articles 23 and 24 of Chapter III of the law states¹⁷ that the smallest ownership should be limited in the future to 5.2 acres. In case a division of the property among the heirs results in less than the limit, the land is acquired by the person who is actually engaged in agriculture, provided the other heirs are paid for their share.

The land distribution up to 1955 was 259,500 acres distributed to 69,000 families composed of 415,000 persons.¹⁸ In addition, 51,900 acres were sold directly to small holders of 12,000 families representing 60,345 persons, and 155,700 acres of "Wakf" land was distributed during 1957-60 to 43,200 families representing 216,000 persons.

Table 22 shows the land distribution by size of ownership before and after the promulgation of the 1952 Land Reform Law. The major change was the shift of 755,000 acres from the greater than 207.6 acres units to those of less than 5.2 acres and those with 10.5 to 51.9 acres. Thus, this change involved 12 percent of the total owned land area. Tangible results of this change, however, have not been identified and measured in terms of specific output. Moreover, one would expect some lag period before significant results would appear.

The cooperative movement in agriculture may be traces to 1909 with the establishment of the Finance Cooperative Corporation. In 1909 the first cooperative law, applying only to agriculture was passed, and resulted in the establishment of the Agriculture Credit Bank in 1931.

¹⁷ Ibid., p. 332.

¹⁸

Doreen Warriner, Land Reform and Development in the Middle East, A study of Egypt, Syria, and Iraq; 2nd ed. S.B.S. No. 159 (Cairo: National House for Printing and Publishing, 1963), pp. 50-51.

Table 22.--Distribution of Numbers of Units and Acreage of Land
by Size of Ownership Unit, Before and After the 1952
Agrarian Reform, Egypt

Size of holdings	Owners		Land owned ^a	
	Number units	Percentage	Acres	Percentage
	(1,000)	(Percent)	(1,000)	(Percent)
<u>Before Agrarian Reform</u>				
5.2	2,642	94.3	2,204	35.4
5.2-10.4	79	2.8	546	8.8
10.5-51.9	69	2.5	1,341	21.6
52.0-103.4	6	0.2	446	7.2
103.4-207.6	3	0.1	454	7.3
207.6	2	0.1	1,222	19.7
Total	2,801	100.0	6,213	100.0
<u>After Agrarian Reform</u>				
<u>1952</u>				
5.2	2,841	94.4	2,887	46.5
5.2-10.4	79	2.6	546	8.8
10.5-51.9	77	2.6	1,511	24.3
52.0-103.4	6	0.2	446	7.2
103.5-207.6	3	0.1	454	7.3
207.6	2	0.1	367	5.9
Total	3,008	100.0	6,211	100.0

^aTotals do not include cultivated land owned by the Government, and religious or charitable organizations.

SOURCE: U.A.R. Administration of Public Mobilization, Statistical Handbook, 1952-62 (Cairo: Dar Memphis, 1963), pp. 15-16.

Its name was changed to the Agricultural Credit and Cooperative Bank in 1949. Until 1957, the services of the Bank were limited to those farmers who could provide land as security. Thus tenants and the many small units received no direct benefit. The Bank was reorganized in 1957,¹⁹ in order to serve the farmers better by changing the security from the land to the crop. At the same time, in three areas, the Bank's operation was limited to the agricultural cooperative societies which in turn made credit available to the farmers. In an attempt to ensure the success of this system, the Bank exercised complete supervision over the cooperative societies. As a result of the success of this system, it was later adopted in all areas. At the end of 1960, all cooperatives were placed under the authority of the Ministry of Agrarian Reform, which administers them through regional offices. Also, they are called "supervised cooperatives," and membership is compulsory. Each cooperative is run by a manager, an elected board of management, and a supervisory committee.²⁰ Table 23 shows the value of loans granted to farmers by the Agricultural Credit and Cooperative Bank from 1952 to 1960. There was a substantial increase in the value of loans made in each year after 1956, especially through the cooperative system where the share of the total value of loans moved from 38.0 percent in 1956 to 84.2 in 1960. The increases in loans for fertilizer probably reflect the increase in use of fertilizer. Thus the credit system and the use

¹⁹ Marei, Land Reform and the Population Problem, pp. 186-188.

²⁰ Charles Issawi, Egypt in Revolution (London: Oxford University Press, 1963), pp. 164-166.

Table 23.--Loans Granted to Farmers Total and those made by the Agricultural Credit and Cooperative Bank, Egypt, 1952 to 1960

Year	Kind of Loans			Total loans	Cooperative loans	Percentage of loans through cooperatives
	Seeds	Fertilizers	Cash ^a			
-----Million dollars-----						
1952	1.9	14.8	20.0	36.7	7.8	21.3
1953	3.1	18.0	16.6	37.7	8.8	23.3
1954	3.4	14.6	22.0	40.1	10.5	26.1
1955	3.4	14.7	26.7	44.8	13.7	30.5
1956	3.0	13.1	24.7	40.8	15.5	38.0
1957	3.3	16.0	27.2	46.5	19.5	41.9
1958	3.2	19.1	34.1	56.3	28.2	50.2
1959	3.7	23.6	40.3	67.6	47.4	70.0
1960	4.6	29.0	50.8	84.3	71.1	84.2

^aLoans for insecticides are included in cash and were not reported separately until 1960 when the amount for insecticides was \$2,737,000.

SOURCE: Hassan Abdallah, The U.A.R. Agriculture, Foreign Relations Department, Ministry of Agriculture (Cairo: S.O.P. Press, 1965), pp. 61-62.

of additional improved inputs were in the right direction to contribute to agricultural growth. However, in view of the fact that there were over three million ownership units, the total volume of credit was still rather low.

Production of fertilizers increased from 17,800 and 11,400 metric tons of nitrogenous and phosphate fertilizers, respectively, as an annual average in 1948-52, to 106,500 and 29,700 metric tons in 1961. Consumption in the same period increased from 98,200 and 16,700 metric tons to 191,900 and 48,400 metric tons.²¹ Consumption per acre of cultivated land was as follows:

Year	Pounds of Fertilizer	
	Nitrogenous	Phosphate
1955	45	8
1956	42	9
1957	57	10
1958	64	10
1959	38	9
1960	64	13
1961	69	17

Law No. 262 of 1956 organized agricultural education on a new basis.²² It delineated the stages of agricultural education and defined the aims of each stage. The aim of agricultural preparatory education

²¹ Cline J. Warren, op. cit., p. 13

²² U.A.R. Information Department The Yearbook, 1963 (Cairo: National Publication House Press, 1964), p. 107.

was to produce agricultural workers with a certain amount of skill in modern agricultural methods suited to environmental conditions and requirements. The aim of agricultural secondary schools was to produce technicians capable of managing farms, directing agricultural enterprises and giving agricultural training guidance. The higher education was provided by five colleges and two higher technical education institutes, in addition to one agricultural vocational training center established in 1956. In 1953-54 there were seven agricultural preparatory schools with a total enrollment of 952 students. These were increased to 29 schools and an enrollment of 7,729 by 1959-60.²³ In agricultural secondary education the number of schools and students enrolled were 21 and 9,000, respectively in 1959-60, compared to 12 and 2,302 in 1953-54.²⁴ There was an increase in the number of students graduated from agricultural colleges, veterinary medicine colleges, and from the agricultural higher institutes.²⁵

Agricultural research was expanded by the organization of agricultural research founded in 1883, and the National Research Center was established in 1956. Emphasis was placed on the development of new varieties, discovery of better methods of cultivation such as the date of planting, determining most economical levels of fertilization, and on developing more efficient methods of irrigation.

Agricultural extension is the third pillar upon which Egyptian agriculture depends in view of the positive role it plays in increasing

²³ The Yearbook, 1963, op. cit., p. 250.

²⁴ Ibid., p. 256.

²⁵ The first group graduated in 1960-61.

agricultural productivity by acquainting the farmers with the findings of research and providing them with the latest information on modern agronomic practices. The first attempt towards creating an agricultural extension service was made in 1944, when a law was passed providing for the establishment of agricultural centers to assist in the development of rural communities through the provision of advisory services and material aids to the farmers. However, with other reform schemes developed under the Revolution, agricultural extension in its modern sense was introduced in 1954 by separating extension work from that relating to the enforcement of agricultural laws. As a result of this, a special department for agricultural extension was established and was staffed with a group of subject-matter specialists in addition to the extension agents who were assigned to various districts of the Country.

The plan set by the Ministry of Agriculture for the extension centers was to establish one such center for each district in the country. On the other hand, veterinary extension was carried out under the supervision of the Veterinary Extension Department through the Animal Health Centers. During 1952 to 1960, for the first time there was the use of all communication facilities to reach the farmers, such as the radio, the distribution of pamphlets, the publication of a news magazine (Fellaha Magazine), and motion pictures.

The development of research and education were certainly in the right direction for promoting agricultural growth. However, one would expect to find several years of lag between initial investment in these activities and the results that could be identified and measured at the aggregate level.

Investment and Income

Table 24 shows the distribution of total public investment by sectors during the fiscal years 1953 to 1960. Total public investment increased at an annual rate of about 32 to 37 million dollars, except in 1956 when the increase was nearly 60 million dollars, and in 1957 and 1960 when there were decreases of 48.5 and 23.0 million dollars, respectively. For the period as a whole, 12.9 percent of the total investment was allocated to agriculture. However, agriculture's share was increased during the period and amounted to 17.2 percent of the total in 1960. As a result of the great dissatisfaction among the majority of the people in the low income groups, substantial emphasis was placed on housing and services such as health and education. Thus the new administration directed tremendous efforts toward public services and the welfare sectors. Of a total investment of \$272.8 million in 1953, 42.6 percent was allocated to housing, education, public utilities, health, social, and other services. This policy continued until 1957 when investment in these sectors amounted to \$163.5 million or nearly one-half of the total investment. Afterward, the share of these sectors declined and by 1960 it represented about 29 percent of total investment.

National income in current prices increased each year during this period (Table 25). Income in the agricultural sector increased at about the same rate as the total. As a share of the total national income, agriculture varied between 31 and 35 percent, with no significant trend indicated (Table 26). While total public investment ranged from 13.3 percent to 17.8 percent of national income, the public

Table 24.--Public Investment Allocation by Sectors, Egypt, 1953 to 1960 Fiscal Years

Sector	1953	1954	1955	1956	1957	1958	1959	1960	Total			Percent of total 1953-60	Percent of total 1953-60
									1953-60	1959	1960		
-----Million dollars-----													
Agriculture ^a	31.5	34.0	35.2	42.6	46.0	49.9	59.8	67.9	366.8	12.9	17.2		
Industry	67.8	62.6	77.3	113.2	71.5	81.9	109.9	113.4	697.6	24.5	28.8		
Electricity	13.3	26.0	16.8	21.8	21.4	17.7	15.4	14.3	146.7	5.2	3.6		
Transportation ^b and Communication	43.9	44.2	54.3	56.4	44.8	65.5	75.9	82.3	467.4	16.4	20.9		
Housing	86.7	105.8	115.0	119.6	115.0	110.4	92.0	71.5	816.0	28.6	18.1		
Public utilities	6.7	6.2	10.6	11.7	14.7	17.7	23.9	17.2	108.7	3.8	4.4		
Other services ^c	22.8	25.8	27.1	30.6	33.8	37.3	40.2	27.6	245.2	8.6	7.0		
Total	272.8	304.5	336.3	395.8	347.3	380.4	417.2	394.2	2,848.5	100.0	100.0		
Percent change from preceeding year	-	31.7	31.8	59.5	-48.5	33.1	36.8	-23.0	-	-	-		

^a Includes irrigation, drainage, and land reclamation.

^b Includes storage and the Suez Canal after 1956.

^c Includes education, health, social and religious services.

SOURCE: U.A.R. Central Agency for Public Mobilization & Statistics; Basic Statistics, 1964 (Cairo: Government Printing and Publishing Houses, 1965), p. 218.

Table 25.—National Income by Sectors, Egypt, 1953 to 1960 Fiscal Years, at Current Prices,
in Millions of Dollars

Sector	1953	1954	1955	1956	1957	1958	1959	1960
Agriculture ^a	579.6	602.6	692.3	717.6	860.2	876.3	837.2	931.5
Industry ^b	292.1	322.0	356.5	391.0	441.6	501.4	552.0	611.8
Construction	57.5	62.1	59.8	62.1	73.6	87.4	98.9	108.1
Transportation ^c and communication	124.2	126.5	133.4	142.6	133.4	149.5	165.6	213.9
Housing	135.7	128.8	142.6	149.5	154.1	156.4	161.0	167.9
Trade and Finance	165.6	172.5	190.9	211.6	232.3	250.7	266.8	296.7
Other services	499.1	533.6	540.5	545.1	558.9	568.1	579.6	625.6
Total	1,853.8	1,948.1	2,116.0	2,219.5	2,454.1	2,589.8	2,661.1	2,955.5

a. Includes irrigation, drainage, and land reclamation.

b. Includes electricity.

c. Includes The Suez Canal after 1956, and storage.

SOURCE: U.A.R. Central Agency for Public Mobilization & Statistics; Basic Statistics, 1964 (Cairo: Government Printing and Publishing Houses, 1965), p. 219.

Table 26.--Public Investment and Income in Agriculture Compared with the Total Economy, Egypt, Based on Current Dollars, 1953 to 1960 Fiscal Years

Item and unit	1953	1954	1955	1956	1957	1958	1959	1960
(1) Agr. income as percent of total	31.3	30.9	32.7	32.3	35.1	33.8	31.5	31.5
(2) Invest as percent of income in:								
(a) Total	14.7	15.6	15.9	17.8	14.2	14.7	15.7	13.3
(b) Agr.	5.4	5.6	5.1	5.9	5.3	5.7	7.1	7.3
(3) Change from preceding year, million dollars, in:								
(a) Total income	-	94.3	167.9	103.5	234.6	135.7	71.3	294.4
(b) Total invest.	-	31.7	31.8	59.5	-48.5	33.1	36.8	-23.0
(c) Agr. income	-	23.0	89.7	25.3	142.6	16.0	-39.1	94.3
(d) Agr. invest.	-	2.5	1.2	7.4	3.4	3.9	10.1	8.0
(4) Ratio of change in income/change in investment:								
(a) Total	-	3.0	5.3	1.7	-	4.1	1.9	-
(b) Agr.	-	9.2	74.8	3.4	41.9	4.1	-	11.8

SOURCE: Calculated from data in Tables 23 and 24.

investment in agriculture ranged from only 5.1 percent to 7.3 percent of the income in that sector. Changes in the amount of investment varied widely from year-to-year without an obvious trend in the rate of change; nor was there a close relationship between rates of change in investment and rates of change in income on a given year basis. However, with 13.3 percent to 17.8 percent of national income invested through the public sector, when combined with private investment, this should have been sufficient to generate income growth on a per capita basis for the economy as a whole.

While per capita income in constant prices was higher at the end of the period than at the beginning, the change could hardly be interpreted as sustained growth (Table 27). It was not until 1960 that per capita income for the economy as a whole exceeded the level reached in 1955. A regression analysis of agricultural income per capita and time showed that the regression coefficient of \$0.408 was not significant at the .05 level.

Data from the Food and Agricultural Organization (FAO) indicate an improvement in agriculture during the 1952 to 1960 period (Table 28).

To sum up, there were some major changes in the structure of the economy, in the 1952 to 1960 period, that should contribute to economic growth. However, output is expected to be lagged with respect to much of the public investment. There was growth in national income and in population, but there were also several wide fluctuations in income. Sustained growth in agriculture and national income per capita could not be definitely established.

Table 27.-Growth in Income and Population, Egypt, 1953 to 1960 Fiscal Years

Item and unit	1953	1954	1955	1956	1957	1958	1959	1960
(1) National income at 1953 prices:								
(a) Total, mil. dol.	1,853.8	2,008.4	2,137.4	2,017.7	2,062.3	2,194.7	2,274.4	2,504.7
(b) Agr. mil. dol.	579.6	621.2	699.3	652.4	722.9	742.6	715.6	789.4
(c) Per capita, total dol.	84.5	89.4	93.0	85.7	85.6	89.0	90.1	97.0
(d) Per capita, agr. dol.	26.4	27.7	30.4	27.7	30.0	30.1	28.4	30.6
(2) Population, mil. ^a	21.9	22.5	23.0	23.5	24.1	24.7	25.2	25.8
(3) Income growth, percent:								
(a) Total	-	8.3	6.4	-5.6	2.2	6.4	3.6	10.1
(b) Total per capita	-	5.8	4.0	-7.8	-0.1	4.0	1.2	7.6
(c) Agriculture	-	7.2	12.6	-6.7	10.8	2.7	-3.6	10.3
(d) Agr. per capita	-	4.9	9.7	-9.1	8.3	0.3	-5.6	7.7
(4) Wholesale price index	100	97	99	110	119	118	117	118

^aPopulation growth rate was a constant 2.36 percent annually.

SOURCE: Compiled and calculated from U.A.R. Central Agency for Public Mobilization and Statistics, Basic Statistics, 1964 (Cairo: Government Printing and Publishing Houses, 1965), pp. 219-220; and U.A.R. C.A. P.M.S., The General Annual Census, 1964 (Cairo: General Organization for Public Printing Houses, 1965), p. 29.

Table 28.--Indices of Total Agricultural Output, Food Production, Total Agricultural Output per Capita, and Food Production per Capita, Egypt, 1952 to 1960

Year	Total production	Food production	Total production per capita	Food production per capita
1956=100				
1952	96	86	101	91
1953	92	93	95	96
1954	102	103	102	103
1955	103	105	100	103
1956	107	112	102	107
1957	115	115	107	107
1958	116	112	106	103
1959	121	119	108	106
1960	127	125	111	109

SOURCE: United Nations, Food and Agriculture Organization, Production Yearbook, 1966, Vol. 20 (Rome: 1967), pp. 27-30.

Chapter IV

THE ECONOMIC AND SOCIAL DEVELOPMENT PLAN

Efficient economic planning is a means for rationally programming for the use of the natural, material, and human resources of the nation in order to ensure more orderly development and welfare of the masses. Since the Revolution of July, 1952, the Government of Egypt has favored planning methods in conducting the economic affairs of the Nation. In the early days following the Revolution, a council for the Development of National Production was established to ensure the best utilization of resources available for development. A Higher Council for Services was entrusted with the responsibility of improving and providing the essential services which were so badly lacking in the various regions of the country. This interest in development planning was finally culminated by the establishment of a separate Ministry for Planning Affairs and the formulation of a comprehensive development plan.

Out of the early efforts for development emerged the objective of doubling the national income in 10 years. This would mean that the annual rate of increase in national income would substantially exceed the rate of increase of 2.6 percent in population. To realize this objective, the Comprehensive Economic and Social Development Plan was apportioned into two 5-year plans.

As a major item of economic development, the construction of the High Dam commenced after the Nation had gone through military, economic,

and psychological pressures. Apart from its great importance to agricultural and industrial development, the High Dam became a symbol of free will and determination to create a prosperous society for all, and particularly to provide lands to the large number of cultivators who were denied land rights in the feudalistic system. Moreover, the horizontal and vertical expansion of agriculture was given special attention in the development programs. Desert and fallow lands were to be reclaimed. Agricultural extension services were to be improved and expanded. Fertilizers, insecticides, and selected seeds were to be fully provided, and projects were designed to improve livestock and diversify crops.

Industrialization, a key to economic development and a stronghold of national integrity, was also emphasized in development plans.

In the field of social development, the immediate objective was to provide to all citizens certain basic rights and services. For a long time the majority of the people had suffered from the discriminating policies. Wealth was inherited and so was poverty. Education and health services were the privileges of the fortunate few, while ignorance and disease fell to the masses. The philosophy of the reforms was to provide equal opportunities to all citizens. Citizens were guaranteed medical care regardless of ability to pay. The degree and extent of education was to be restricted only by the aptitude and capacity of each person. The right of all to work and obtain a minimum wage was instituted. Old age security and workmen's compensation for disability were provided. In addition to these changes, religious, cultural, and recreational services were expanded. Defense, police, and the judiciary systems were strengthened.

Formulation of the Plan¹

As a result of the intermittent and sometimes unsuccessful efforts to develop the economy, and in order to achieve an integration of efforts among all agencies concerned, the decision was made to resort to National economic and social planning in an attempt to accelerate the rate of economic development and economic growth.

The idea of planning gathered momentum with the establishment of the National Production Council as an autonomous body with a technical secretariat soon after the 1952 Revolution. The Council functioned through four committees, appointed to consider development projects in the different sectors of the economy. The projects were selected by the Council on an ad hoc basis from among those submitted by the ministries and agencies concerned. A separate development budget was appropriated, for the years 1953-55, for development projects under the separate budgets of the National Production Council, the Public Service Council and the Public Works Program. Of the total development budget for the National Production Council, 52 percent was appropriated for agricultural projects, including irrigation and drainage, seed supply and livestock development.

Along with the establishment of the National Production Council, the Government approved an "Agricultural Policy in the New Era," in

¹U.A.R. Information Department, The Yearbook, 1963 (Cairo: National Publication House Press, 1964), pp. 70-75; M.M. El-Kammash, Economic Development and Planning in Egypt (New York: Frederick A. Praeger Inc., 1968), p. 298; Hassan Abdallah, The U.A.R. Agriculture, Foreign Relations Department, Ministry of Agriculture (Cairo: S.O.P. Press, 1965), pp. 84-87; National Bank of Egypt, Economic Bulletin, Vol X, No. 1 (Cairo: 1959), p. 40.

January, 1953, which provided guidelines for the development of agriculture. In May, 1958, a further step was taken by the formulation of "An Action Program for the Agricultural Policy." This program, which embraced a number of development projects, provided to a large extent the bases upon which the 5-year Plan projects were later formulated.

By the late 1950's the need became apparent for an overall integrated development plan to ensure a balanced growth of the national economy and a more equitable distribution of wealth and income. The actual work in preparation for the plan started in 1957. In January of that year, a decree established two agencies to undertake preparation of the plan. One agency was the Supreme Council for National Planning under the Chairmanship of the President of the Republic. This Council formulated the economic and social targets of the plan and approved the development plans in their various stages. The second agency was the National Planning Commission, which was headed by the Minister of Planning Affairs. The six departments of committees of this Commission were concerned with economics, agriculture and irrigation, industry and electricity, transportation and communication, commerce and trade, and services and municipal facilities. The committees set up 60 sub-committees to consider groups of related topics. The Commission was charged with the responsibility for preparation of the plan. After implementation was initiated, the Commission was given the responsibility of submitting periodic progress reports to the Supreme Council. The main function of the Commission was the collection and preparation of all the technical and statistical data needed for the plan. This included a survey of the natural and human resources of the Country. In addition, it undertook a study of the allocation of investments to the various

sectors as well the possible means of financing economic development. In 1958 it had been announced by the President of Egypt that an integrated plan for economic development would be formulated with the object of doubling the national income in 20 years. Later the President issued directives that the plan should be formulated to double the national income in 10 instead of 20 years.

The planning process was started by developing targets for the different sectors in terms of value and for some sectors in physical terms. Agricultural production targets were worked out on the basis of technical improvements, such as the use of better seeds, fertilizers, and insecticides, the area of reclaimed land, and the additional area brought under irrigation. Targets were established for the principal commodities, taking into account the local crop patterns. For the earlier years the main reliance was placed on higher yields, and for the later years on the increase in the irrigated area that was to come from construction of the High Dam. The targets also allowed for the effect of institutional changes, such as measures under the Agrarian Reform Law, improved marketing, the establishment of cooperative marketing societies, and the construction of storage facilities. Consumption targets were based on the assumption that there would be an increase of about 25 percent in consumption during the first five years. In the industrial targets first priorities were given to heavy industries that would use domestic raw materials.

The plan framework, as thus prepared by the Ministry of Planning, indicated the proposed expenditure and targets for the different phases in the plan period, and the sectoral allocations of expenditures. The

plan framework was thereafter submitted to the Supreme Council for Planning, and after its approval was referred to different committees of the Ministry of Planning for the details to be worked out.

The expenditure and projection targets laid down in the plan framework were allocated among the sub-committees, which were requested to recommend suitable projects. The projects proposed by different ministries were referred to the committees and sub-committees for consideration, but it was open to them to consider or recommend alternative projects on their own initiative. The committees watched for discrepancies among the projects of the different ministries. The reports of the committees were received by the Ministry of Planning, who prepared summaries of them for submission to the Supreme Council and requested the Supreme Council's directives on the major policy issues involved. The reports in turn were referred back to the committees. The Ministry of Planning also remained in touch with the Ministry of the Treasury to ensure that the expenditure proposals for different sectors included in the annual budget were in general conformity with the expenditure proposed in the plan. If the budget allocations were found to be deficient, the Ministry of Planning would make appropriate recommendations to the Ministry of Treasury.

The programs for the different sectors were prepared by the units concerned in various ministries who were also principally responsible for their implementation. The details of the projects included in these programs were worked out in accordance with the instructions issued by the Ministry of Planning.

After the plan framework was finally approved by the Supreme Planning Council, it was adopted by a Presidential Decree on July 18,

1960, taking the estimates of fiscal year 1960 as the base. After implementation of the plan was initiated the evaluation and follow-up units in various ministries had to submit periodic progress reports to the the Ministry of Planning which, by evaluating them, would keep the progress of the Plan as a whole under constant review.

The preceding discussion shows that the planning organization and the procedures were very complicated. Coordination among the different organizations was difficult. The process became more complicated after the creation of the U.A.R., as there were a Central Minister of Planning and one Minister for each of the southern (Egypt) and the Northern (Syria) Regions. While the responsibility for planning was placed at a high level in Government to give it status and authority there should have been more interaction among all levels of the action agencies and the Ministry of Planning during the development of the plan. Also, the roles of the public and private sectors were not clearly defined. There was a great deal more to be done than the public sector was staffed and organized to do. The process for evaluation of progress and the removal of obstacles were cumbersome and ineffective.

The Objectives of the Plan²

The gross national product was to be raised to \$8,282 million in the last year or fifth year of the plan compared to \$5,808 million in

² National Planning Committee for Southern Region, The Frame of the General Five-Year Plan for Economic and Social Development (July, 1960-June, 1965) (Cairo: General Organization for Government Printing Offices, 1960), pp. 1-18; U.A.R. Information Department, The Yearbook, 1963 (Cairo: National Publication House Press, 1964), pp. 70-75;

the base year of 1960, an increase of \$2,475 million or 42.6 percent. National income was to be increased to \$4,129 million by the end of the plan compared to \$2,949 million in the base year. This increase of \$1,180 million would be distributed as follows: \$258 million in agriculture, \$614 million in power and industry and \$308 million in the remaining sectors. Thus, more than 50 percent of the additional income expected during the five years was to accrue from power and industry. This increase depicts the emphasis that was to be placed on industry in order to ensure an increasing national income that would exceed the growth of population.

The increase in national income was to be directed partly to further development processes and partly to additional consumption. This is revealed by the planned increase in the volume of consumption from \$2,019 million at the beginning of the plan to \$2,502 million at its termination, an increase of \$483 million or 25 percent.

The plan called for a fair rate of equality in the distribution of income and the expansion of employment opportunities by about one million new jobs, an increase in employment from six million people in the base year to seven million at the end of the fifth year or an increase of about 19 percent. The planned increase in the number of employees amounted to 39 percent in the industrial sector, 16 percent in agriculture, and 15 percent in the service sectors. The planned increase in wages and

salaries was from \$1,264 million in the base year to \$1,947 million at the end of the plan, an increase of 54 percent.

The deficiency in the foreign balance of payments was to be removed during the early stages of development. Total planned public investment amounted to \$3,627 million during the Plan.

The Targets of the Plan

Table 29 shows the income targets for fiscal years 1965 and 1970 by major sectors and estimates of 1960 income. The difference between gross product and national income appear to be excessive, but this matter cannot be explained on the basis of existing information. Change from 1960 in the composition of output is noticeable. The national income target in 1970 in the agricultural sector is 57 percent higher than the base year, in industry it is 194 percent higher. In the base year agriculture accounted for 31 percent and industry for 21 percent of national income. In the 1970 target agriculture's share is reduced to 24 percent and industry's share is increased to 31 percent. Industry and construction together move from 25 percent in 1960 to 34 percent in the 1970 target (Table 30).

The income targets of the plan were set on the basis of a domestic savings rate of about 20 percent of national income, a very high figure for a country with such low levels of living and income. Furthermore, the targets for external financing were quite high and could be expected to increase the balance of payment difficulty.

Table 29.--Gross National Product and National Income by Sector, Egypt in 1960 and Targets for 1965 and 1970 Fiscal Years, Millions of Dollars^a

Sector	Gross national product		
	1960	1965	1970
Agriculture	1,320	1,693	2,093
Industry and electricity	2,516	4,172	5,750
Building and construction	265	281	384
Supporting economic structure ^b	823	1,007	1,316
Commerce	375	478	736
Services	508	651	1,086
Total	5,807	8,282	11,365

Sector	National income		
Agriculture	920	1,178	1,442
Industry and electricity	628	1,242	1,845
Building and construction	120	117	172
Supporting economic structure ^b	600	727	1,000
Commerce	292	373	610
Services	389	492	828
Total	2,949	4,129	5,897

^aThe Egyptian pound is equivalent to U.S. \$2.30. Although it was equivalent to \$2.80 until 1961, all data in this study were converted to U.S. dollars at the rate of \$2.30 per Egyptian pound in order to allow comparisons over time in terms of U.S. dollars.

^bThis sector includes: transportation, communication, storage, housing, public utilities, justice, security, defense, and Government services.

SOURCE: Compiled from National Planning Committee for Southern Region, The Frame of the General Five-Year Plan for Economic and Social Development (July, 1960-June, 1965) (Cairo: General Organization for Government Printing Offices, 1960), pp. 14, 51 and 61.

Table 30.--Percentage of Gross National Product and National Income by Sectors, Egypt, 1960 and Targets for 1965 and 1970 Fiscal Years

Sector	Gross national product		
	1960	1965	1970
Agriculture	22.7	20.4	18.4
Industry and construction	47.9	53.8	54.0
Services sectors ^a	29.4	25.8	27.6
Total	100.0	100.0	100.0

Sector	National income		
Agriculture	31.2	28.5	24.5
Industry and construction	25.4	32.9	34.2
Services sectors ^a	43.4	38.6	41.3
Total	100.0	100.0	100.0

^aThis includes transportation and communication services, housing, public utilities, commerce and finance, education, health, social and religious services, security, justice and defense, government services, and personal services.

SOURCE: National Planning Committee for Southern Region, The Frame of the General Five-Year Plan for Economic and Social Development (July, 1960-June, 1965) (Cairo: General Organization for Government Printing Offices, 1960), p. 14.

Agricultural Targets

The 10-year plan with respect to agriculture had a short-term and a long-term program. The short-term program envisaged the reclamation of about 540,798 acres of land by 1965, divided as follows:³ 483,708 acres to be irrigated by summer irrigation; 25,950 acres to be irrigated by sprinklers with water obtained from subterranean (artesian) wells; and 31,140 acres to be irrigated by water made available by the High Dam. The long-term program was aimed at the reclamation of an additional large area of fallow land through the utilization of water provided by the High Dam. It was estimated that it would add about one million acres of arable land to the existing cultivated area and allow the conversion of an additional 726,000 acres from the basin to the perennial irrigation system.⁴

The other major programs were for increasing crop and livestock yields by using more fertilizers, better varieties of seeds, improvement of cultivation practices such as the dates, methods and rates of seeding more efficient water management, more effective control of plant insects and diseases through periodic surveys and campaigns, and more selective breeding of livestock.

The planned agricultural production increased by 28 percent by the end of the first five years, and by 59 percent by the end of the

³The Yearbook, 1963, op. cit., p. 145.

⁴U.A.R. Information Department, Land Reclamation (Cairo: Al Shaab Printing House, 1963), p. 4.

second phase of the plan, 1970 (Table 31). According to the 10-year plan, the value of agricultural output would increase from \$1,320 million in 1959-60 to \$1,693 million by the end of the first phase, 1965, and to \$2,093 million by the end of the second phase, 1970. This rate of change would increase value added by agriculture from \$920 million in 1960 to \$1,178 million by 1965, and to \$1,442 million by 1970. Agriculture targets were low considering that it is the major source of foreign exchange.

Industrial Targets

The targets assigned to the various sectors show the emphasis placed on heavy industries (Table 32). The index numbers of targets show that the production of heavy industries was scheduled to triple by 1965 and to more than quadruple by 1970. Considering the large amount of investment planned for this sector, it is clear that concentration during this period of planning was on producer's goods and heavy industries in particular. The production of light industries was scheduled to about double by 1970. A summary of the indices of targets by major sectors is given in Table 33.

Employment

In fiscal year 1960, employment amounted to approximately six million persons. With a population of about 26 million, the ratio of employment to total population was 23 percent. The 1970 target for employment amounted to 8,936,000 workers. Since population was projected to be 31.6 million in 1970, the ratio of employment to total population would become 28 percent, an increase of about one-fifth in total employment.

Table 31.--Production Value, Value Added, and Production Index for the Agriculture Subsectors, Egypt, 1960 and Targets for 1965 and 1970 Fiscal Years, Millions of Dollars

Subsector	Production value				Value added		Production index	
	1960	1965	1970	1960	1965	1970	1965	1970
Fiber group	311.6	387.3	410.8	263.8	332.6	a	124	132
Other field crops	368.7	498.4	599.4	236.0	333.5	a	135	163
Vegetables, fruits, and trees	134.3	164.0	225.4	114.3	135.5	a	122	168
Livestock and feeds	460.0	582.4	778.8	263.6	319.0	a	127	169
Other crops	45.1	61.2	78.7	42.1	56.4	a	136	174
Total	1,319.7	1,693.3	2,093.0	919.8	1,176.9	1,442.0	128	159

^aNot available for 1970.

SOURCE: Compiled from National Planning Committee from Southern Region, The Frame of the General Five-Year Plan for Economic and Social Development (July, 1960-June, 1965) (Cairo: General Organization for Government Printing Offices, 1960), pp. 8 and 52.

Table 32.—Production Value, Value Added and Production Index for Industrial Subsectors, 1960 and Targets for 1965 and 1970 Fiscal Years, Egypt, Millions of Dollars

Industry	Production value				Value added		Production index	
	1960	1965	1970	1960	1965	1970	1965	1970
Mining	51	171	276	43	142	4	338	545
Hydraulic power	142	308	415	76	166	a	218	293
Metallic industries and machinery	139	542	742	63	223	a	389	532
Chemical industries	86	268	421	35	114	a	313	491
Total heavy industry	418	1,289	1,854	217	645	a	310	446
Industries for consumption ^a	1,553	2,128	3,032	310	446	a	137	195
Other industries ^b	548	754	864	103	152	a	138	158
Total light industry	2,101	2,882	3,896	413	598	a	137	185
Grand total industry and electricity	2,519	4,171	5,570	630	1,243	1,845	166	228

^aNot available for 1970.

^bIncludes cotton weaving, which is dependent on the production of cotton, so expansion in this industry is restricted by cotton produced each year. If cotton weaving is excluded from this subsector, the production value would amount to \$203, \$314, and \$408 million in 1960, 1965, and 1970, respectively; and the product index would become 154 in 1965 and 201 in 1970.

SOURCE: National Planning Committee for Southern Region, The Frame of the General Five-Year Plan for Economic and Social Development (July, 1960-June, 1965) (Cairo: General Organization for Government Printing Offices, 1960), pp. 10 and 53.

Table 33.--Index of Production in Base Year and Targets by Economic Sector at the End of the Two Stages of the Ten-Year Plan, Egypt

Sector	Production index 1960=100	
	1965	1970
Agriculture	128	159
Industry ^a	166	228
Building and construction	106	145
Supporting economic structure	122	160
Commerce	128	196
Services	128	213
Total	130	184

^aProduction target indices were: 310 and 445 for heavy industry, and 137 and 185 for light industry in 1965 and 1970, respectively.

SOURCE: Compiled from National Planning Committee for Southern Region, The Frame of the General Five-Year Plan for Economic and Social Development (July, 1960-June, 1965) (Cairo: General Organization for Government Printing Offices, 1960), pp. 8-13; National Bank of Egypt, Economic Bulletin, Vol. XI, No. 1 (Cairo: 1961), p. 9.

With the major emphasis on industry during the 10 years, one would expect the distribution of employed persons among the various sectors to undergo some change. Table 34 shows the planned percentage distribution of employed persons by sectors. The agricultural sector, which absorbed 54.3 percent of employed persons in 1960, was projected to absorb about half the employed persons in 1970. In other words, agriculture would still be the major occupation but, on the other hand, would provide only one-fourth of the national income. Employed persons in industry would increase from 10.6 to 11.7 percent of total employment during the 10 years of the plan. The share employed in services, would increase from 13.3 to 16.1 percent.

With regard to the share of labor in national income, in 1960 it received \$1,311 million from a total of \$2,949 million, or 44 percent. It was projected that by the end of 1965, the share of labor would drop to 42 percent. By the end of the plan, in 1970, the target is back to 44 percent. Thus, the share of labor in total national income was not expected to increase as a result of this development plan.

There are large differences in income targets per worker among sectors. In agriculture the increase is from a base of \$283 per employee to \$324 in 1970 compared with comparable figures of \$993 and \$1,764 in industry, and \$1,196 to \$1,419 in the supporting structure (Table 35). The average income per employee in agriculture is about one-fifth of that in industry and about one-half of that in construction, commerce, and services. The target for average production per family shows an increase from \$1,129 in 1960, to \$1,792 in 1970. This represents an increase of about 50 percent.

Table 34.--Percentage Distribution of Employed Persons in 1960 and the Targets for 1965 and 1970, Egypt

Sectors	1960	1965	1970
-----Percent-----			
Agriculture	54.3	54.3	49.9
Industry	10.6	12.1	11.7
Construction	2.8	2.3	2.5
Supporting economic structure	8.4	7.9	7.9
Commerce	10.6	10.4	11.9
Services	13.3	13.0	16.1
Total	100.0	100.0	100.0
Labor force as a percentage of population	23.5	24.7	28.2

SOURCE: National Planning Committee for Southern Region, The Frame of the General Five-Year Plan for Economic and Social Development (July, 1960-June, 1965) (Cairo: General Organization for Government Printing Offices, 1960), p. 17.

Table 35.--Average Income per Employee by Sectors, Population, Number of Families, Average Value of Production, and Income per Family in 1960 and Targets for 1965 and 1970 Fiscal Years, Egypt

Sector	1960	1965	1970
-----Dollars-----			
<u>Average income per employee</u>			
Agriculture	283	311	324
Industry	993	1,465	1,764
Construction	704	738	780
Supporting economic structure	1,196	1,320	1,419
Commerce	462	510	575
Service	490	538	575
Total	495	589	660
<u>Item and unit</u>			
Population (millions)	25.7	28.7	31.7
Number of families (millions)	5.14	5.74	6.34
Production per family (dollars)	1,129	1,442	1,792
Income per family (dollars)	575	720	929

SOURCE: National Planning Committee for Southern Region, The Frame of the General Five-Year Plan for Economic and Social Development Plan (July, 1960-June, 1965) (Cairo: General Organization for Government Printing Offices, 1960), pp. 15 and 16.

The planned increase in average income per family was from \$575 in 1960 to \$929 in 1970. Thus, the target was to nearly double the average income per family during the plan period.

Investment

Investment needed for implementation of the plan was estimated to be \$7,576 million. Table 36 shows the planned distribution of this total investment in the two phases by major sector, and by sources of financing.

Heavy concentration of investment was scheduled for industry and electricity, followed by investment in the supporting economic structure, i.e., the building of the infrastructure. Investment planned for agriculture ranked third, but would still absorb about one-fourth of the total investment. It was expected that total investment would be financed by \$2,748 million from external sources, while the remaining \$4,827 million would be supplied from domestic sources. The share of external sources in financing investment was a little over one-third of the total.

Total planned investment in the agricultural sector during the first five years of the 10-year plan amounted to \$902 million and would increase to \$948 million for the second five years. Investments in agriculture during both phases of the plan were to be directed mainly toward horizontal expansion or the reclamation of more agricultural land. According to the plan, the High Dam would absorb over one-third of the total planned investment in the first phase. It should be noted that foreign exchange requirements for agricultural development were expected to be relatively low. Foreign exchange estimates for agricultural

Table 36.--Distribution of Investments by Source, Sector, and Subsector During the Two Stages of the Plan, Egypt

Sector	1961-65			1966-70		
	Foreign	Domestic	Total	Foreign	Domestic	Total
Million dollars						
Vertical expansion	34	85	119	51	138	189
Horizontal expansion	89	310	399	120	478	598
Irrigation, drainage, and High Dam	58	326	384	23	138	161
Total agriculture, irrigation and drainage	181	721	902	194	754	948
Mining and research	74	48	121	58	58	116
Hydroelectric power	311	162	473	207	172	379
Metallic industries & machinery	145	102	247	104	80	184
Chemical industries	104	49	153	92	58	150
Industries for consumption	112	73	185	150	150	300
Other industries	117	34	151	80	69	149
Total industry and electricity	863	468	1,331 ^a	691	587	1,278
Transportation and communication	258	367	625	150	437	587
Buildings and construction	68	334	402	92	540	632
Public utilities	41	72	113	46	92	138
Supporting economic structure	367	773	1,140	288	1,069	1,357
Services	75	180	255	92	276	368
Total	1,468	2,142	3,628	1,265	2,686	3,951

^aElectricity \$321 million, and industry \$1,010 million.

SOURCE: Compiled from National Planning Committee for Southern Region, The Frame of the General Five-Year for Economic and Social Development (July, 1960-June, 1965) (Cairo: General Organization for Government Printing Offices, 1960), p. 18.

development amounted to only \$182 million for the first phase, and \$193 million for the second phase of the plan. This amounts to 20.0 percent of its total investment compared to 47.9 percent which is the share of foreign capital in total investment for the rest of the economy during the first phase. More capital should have been directed toward agriculture, as the return to investment in agriculture was the highest among sectors during the 1950's, most of the investment was financed internally, and Egypt still imported most of its staple foods. Initially, industry was allotted the sum of \$998 million, but this was revised to \$1,010 million in 1962.

A breakdown of industry's share of the investment is given in Table 37. This sum of investments comprises a backlog of unfinished projects under the first industrialization program of 1957 to 1960 in addition to projects developed under the second program. It would help to follow the progress of the plan if the framework had included the planned investments in each year.

Consumption

The planned increase in national income from \$2,949 million in 1960 to \$4,129 million in 1965 an increase of \$1,180 million, was allocated partly to development processes and partly to increased consumption. The increase in the value of consumption was from \$2,019 million at the beginning of the plan to \$2,502 million in 5 years, an increase of \$483 million, or 25 percent over consumption in the base year of the plan. This means that about 40 percent of the increase in the income target was allocated to consumption and 60 percent to public

Table 37.--Distribution of Planned Investments in Industries, Egypt

Industry	Million dollars
Petroleum	190
Mining	84
Chemical and pharmaceutical	191
Food	69
Spinning and weaving	101
Basic metallurgical	108
Engineering	132
Rural	4
Vocational training	8
Measurements and tests	5
Ancillary industries and renewals	106
Total	998 ^a

^aRevised to \$1,010 million in 1962.

SOURCE: U.A.R. Information Department, The Yearbook, 1963 (Cairo: National Publication House Press, 1964), p. 129.

investment, a very high marginal rate. In 1960, 31.5 percent of national income was allocated to public investment; the target for 1965 was set at 39.4 percent, an exceptionally high rate. The consumption of flour, wheat, corn and maize was projected to rise from \$198 million in 1960 to \$240 million in 1965.⁵ Consumption of fresh meat was scheduled to rise from \$137 to \$167 million, bread from \$129 million to \$149 million, cotton textiles from \$114 million to \$130 million, vegetables from \$89 million to \$110 million, sugar from \$58 million to \$71 million, clothes from \$51 to \$88 million, animal production from \$49 to \$58 million, and pharmaceutical products from \$28 to \$43 million.

Plan Balances

1. There is the balance in the input requirements of production such as raw materials, fuels, etc. needed to increase production from \$5,807 million in 1960 to \$8,282 million in 1965. Calculations concerning the plan show that the value of these requirements would increase from \$2,860 million in 1960 to \$4,148 million in 1965.⁶

2. The employment balance means that the skilled workers, technicians and administrators necessary for the realization of the aims of the production must be found. Provision for this balance was included in the investment plan.

⁵The Yearbook, 1963, op. cit., p. 73.

⁶The Yearbook, 1963, op. cit., p. 75.

3. The investment balance means that revenues from domestic savings in addition to foreign loans and grants must meet the requirements of the investment plan.

4. The balancing of commodities means that the total imports in addition to the local production of any of the commodities must be balanced with total uses.

Chapter V

DEVELOPMENT AND GROWTH DURING THE PLAN PERIOD

Early in the plan period there were important organizational changes. At the end of 1960, all cooperatives were placed under the authority of the Ministry of Agrarian Reform which administered them through regional agrarian reform offices. Also, they were to be re-organized as "supervised cooperatives." These cooperatives were set up on each estate and membership was made compulsory. Membership in a cooperative usually runs into the hundreds and may be over 1,000. They are operated by a manager, an elected board of management and a supervisory committee.¹ Each cooperative is provided with a trained agricultural supervisor, an accountant, and a clerk, and each is paid by the government. The other members of the board of management are from the local farmers, who serve as honorary members. These supervised cooperatives were successful. A United Nations study on cooperatives reports that these societies, "...at least in their early years, have had considerable advantages over other agricultural societies."²

The largest nationalization movement ever experienced in Egypt occurred in July, 1961. The nationalization laws radically changed the

¹United Nations, Economic and Social Council, "The Cooperation Movement in Africa," Fourth Session of the Economic Committee on Africa (Addis Ababa: 1962), Mimeograph, p. 6.

²Ibid., p. 7.

economy, with the public sector emerging as the main power to exercise complete control over the major part of the economy. First, all banks and insurance companies were nationalized, together with maritime companies and 50 other companies mainly engaged in basic and heavy industries. Second, 83 companies were partially nationalized through government's acquisition of at least 50 percent of each company's capital. This group of companies was mainly engaged in light industries and contractual work. A third group of 145 companies was also partially nationalized through government's acquisition of all holdings of any shareholder in excess of \$23,000 (market value) worth of shares.³ The value of the shares taken by the government was settled by means of government bonds of 15 years at 4 percent interest. This group consisted mainly of companies in the textile industry and some other light industries which were owned by a limited number of individuals or families.

Republic Decree No. 1899 of December 16, 1961, set up the Supreme Council of Public Organization with 38 specialized Public Organizations to undertake the functions of supervising different sectors of the economy, and to replace the old organization in the nationalized companies.⁴ Each of these organizations was charged with the task of supervising several companies which belonged to one type of economic activity. The plan targets were assigned to each one of these

³National Bank of Egypt, Economic Bulletin, Vol. XIV, No, 3 (Cairo: 1961), pp. 276-277.

⁴U.A.R. Information Department, The Yearbook, 1963 (Cairo: National Publication House Press, 1964), p. 130; National Bank of Egypt, Economic Bulletin, Vol. XIV, No. 3 (Cairo: 1961), pp. 387-388.

organizations. A subsequent decree defined the power of Ministers and their responsibilities for the realization of the aims of public organization under the new set-up. The Ministry of Industry was given control of nine public organizations as follows: (1) the Egyptian Public Organization for Mining, 12 companies; (2) the Egyptian Public Organization for Petroleum, eight companies; (3) the Egyptian Public Organization for Spinning and Weaving Industries, 38 companies; (4) the Egyptian Public Organization for Chemical Industries, 31 companies; (5) the Egyptian Public Organization for Food Industries, 36 companies; (6) the Egyptian Public Organization for Manufacture of Building Materials and Ceramics, nine companies; (7) the Egyptian Public Organization for Metallurgical Industries, eight companies; (8) the Egyptian Public Organization for Engineering Industries, 24 companies; and (9) the Egyptian Public Organization for Production Cooperatives and Small Industries.

The Ministry of Agriculture was given control of Egyptian Public Organization for Agricultural Cooperatives, Public Authority for Agricultural Production, Public Organization for Poultry, Public Organization for Meat, and the Egyptian Public Organization for Agricultural and Cooperative Credits. The Ministry of Agrarian Reform was given control of the Public Authority for Agrarian Reform, Egyptian Public Organization for Desert Rehabilitation, Egyptian Public Organization for Land Reclamation, Egyptian Public Organization for Land Rehabilitation, and Egyptian Public Organization for Exploitation and Development of Reclaimed Land.

Socialist Laws, promulgated in July, 1961, were as follows:⁵

(1) A law entitling the workers and employees of every company or organization to a 25 percent share of the profits, 10 percent in cash and 15 percent in social and other services; (2) A law providing that the personnel of each company or organization should have two representatives on its board of directors, to be elected by general secret ballot, one representing the workers and the other representing the employers, the law also stipulated that the number of board members should not exceed seven; (3) A law stipulating that annual salaries in any public organization or affiliated company should not exceed \$115,000 per person, including all allowance; (4) A Republican Decree regulating the employment of workers in industrial organizations and fixing work hours at 42 weekly; (5) A law stipulating the minimum wages for agricultural workers at \$0.42 a day. These social laws were intended to direct all the energies of the nation to production in such a way that the benefits would be shared by all citizens. Free education at all levels was promulgated by a Republic Decree in 1961. The 1952 Land Reform Law was revised by limiting the maximum ownership of land to 104 acres, instead of 208 acres, by a Republic Decree in July, 1961.

In July, 1964, by a Republic Decree land payments were reduced to 10 years and interest on the installments paid under the Land Reform program was abolished. Originally the land was to be paid for in installments carrying an interest of 3 percent over a period of 40

⁵The Yearbook, 1963, op. cit., pp. 130-131.

years.⁶ Also interest was abolished on the credits received by the farmers through the cooperatives.⁷

Thus, major institutional developments, affecting the economic, social, and political structures, occurred early in the plan period.

The principle objective of the Egyptian development plan was to double national income over a period of 10 years, 1961 to 1970, with a 40 percent increase by 1965. This would result in an average annual rate of growth of 7 percent in national income during the first five years. Another objective was to ensure a more equitable distribution of income. It should be noted that since the publication of the Frame of the General Five-Year Plan for Economic and Social Development (July, 1960-June, 1965), by the National Planning Committee, the national income estimate for the base year, 1960, has been revised to \$2,956 million, and gross national product to \$5,860 million. The revised figures are used in the following comparisons and evaluation of the results of the plan. This revision accounts for the discrepancy between the figures of the base year in this Chapter and those in Table 29 of Chapter IV.

Planned and Realized Investments

Table 38 shows realized investments by sector during the first 5-year plan period. The level of investment over the base year was increased substantially in each sector. The following comparison

⁶ Hassan Abdallah, The U.A.R. Agriculture, Foreign Relations Department, Ministry of Agriculture (Cairo: S.O.P. Press, 1965), pp. 21-22.

⁷ Ibid., pp. 64-65.

Table 38.--Public Investment by Sector, Egypt, Base Year of 1960 and Plan Period of 1961 to 1965
Fiscal Years, in Current Prices

Sector	1960	1961	1962	1963	1964	1965	Total 1961-1965
---Million dollars---							
Agriculture ^a	68	87	120	170	235	205	817
Industry	113	156	116	185	242	230	929
Electricity	14	13	14	27	82	122	258
Construction				8	10	12	30
Total commodity sectors	195	256	250	390	569	569	2,034
Transportation and communication	82	172	164	124	104	113	677
Trade, commerce and finance				12	8	15	10
Housing	72	44	87	86	86	68	371
Public utilities	17	18	23	31	19	25	116
Other services	28	28	42	49	64	53	236
Total service sectors	199	262	328	298	288	269	1,445
Total, all sectors	394	518	578	688	857	838	3,479

^a Including irrigation, drainage, and the High Dam Project

^b Including the Suez Canal improvements.

SOURCE: Compiled from U.A.R. Central Agency for Public Mobilization and Statistics, Yearbook for General Statistics, 1952-67 (Cairo: Nahdet Misr, 1968), p. 220.

shows realized and planned public investment in millions of dollars for major sectors of the economy:

	<u>Realized investment</u>			<u>Percent realized</u>	
	Planned investment	Current prices	Constant 1960 prices	Current prices	Constant 1960 prices
Agriculture	902	817	794	91	88
Industry and electricity	1,331	1,187	1,150	89	86
Rest of the economy	1,394	1,475	1,439	106	103
Total investment	3,627	3,479	3,383	96	93

According to these figures unfulfilled investment amounted to only \$147 million in current prices, and \$244 million in constant 1960 prices. In other words, 96 percent and 93 percent of total planned investment was realized in current and constant 1960 prices, respectively. More important, however, is the fact that investment during the 5-year plan period averaged about 80 percent above the 1960 rate. The largest percentage difference between planned and realized investment was in industry and electricity and probably was due to the inability to acquire sufficient external capital.

Income Realized

Apparently, realized income by 1965, which amounted to \$4,333 million, exceeded planned income which was \$4,129 million (Table 39). This apparent excess was due to the increase in the general price level.

Table 39.—National Income by Sector in Current Prices, Egypt, 1960 to 1965 Fiscal Years

Sector	1960	1961	1962	1963	1964	1965
---Million dollars---						
Agriculture ^a	931	926	858	978	1,093	1,215
Industry	590	657	713	807	902	974
Electricity	23	28	38	42	44	53
Construction	108	102	169	192	221	213
Total commodity sectors	1,652	1,713	1,778	2,019	2,260	2,455
Transportation ^b and communication	214	235	269	305	359	399
Trade, commerce and finance	297	334	349	354	369	387
Housing	168	170	175	179	181	182
Public utilities	15	15	16	17	18	18
Other services	610	669	659	720	814	892
Total service sectors	1,304	1,423	1,468	1,575	1,741	1,878
Grand total	2,956	3,136	3,246	3,594	4,001	4,333

a. Including irrigation, drainage, and the High Dam Projects.

b. Including Suez Canal improvements.

SOURCE: U.A.R. Central Agency for Public Mobilization and Statistics, Statistical Yearbook, 1965 (Cairo: Eastern Publication Company, 1966), p. 212; Selective Statistics, 1952-1966 (Cairo: Dar Nempis, 1967), p. 122; Statistical Handbook, 1952-65 (Cairo: Nadeit Misr, 1966), p. 222.

Real national income in the prices of the base year, 1960, and for each year of the first 5-year plan is shown in Table 40. In constant prices, realized income in 1965, which amounted to \$4,053 million, was below planned income of \$4,129 for that year by less than 2 percent. Instead of a planned increase of 40 percent during 1961 to 1965, actual growth amounted to 37 percent. Although the overall deviation of realized income from planned income was very small, there were considerable deviations in the individual sectors. The annual average growth rate during the five years was 6.5 percent instead of the planned 7.0 percent. The total commodity sector showed a rate of 6.3 percent and the total services sector a rate of 6.7 percent. However, the rate in the agricultural sector was only 3.2 percent, while for industry it was up to 8.9 percent.

Income from electricity increased 124 percent, while construction income increased 98 percent. Income from transportation and communication increased 64 percent. Income from trade, commerce, and finance increased 25 percent, housing 11 percent, public utilities 10 percent, and other services, such as health, education, and educational and social services increased 44 percent.

Average compound rate of growth in the real national income during the plan period was 6.5 percent, compared to 4.6 percent during 1953 to 1960. Thus, there was an increase of about 2 percent annually over the 1953-60 level. There were low rates of growth in 1961 and 1962, due to the severe damage to the cotton crop by insects in the 1961-62 season. When real national income in units of one million dollars was regressed on years, the linear regression coefficient was found to be 220.7 with a standard error of 13.8. This coefficient was significant

Table 40.--National Income by Sectors in Constant 1960 Prices, Egypt, 1961 to 1965
Fiscal Years

Sector	1961	1962	1963	1964	1965	1965 as per- cent of base
-----Million dollars-----						
Agriculture ^a	926	858	981	1,041	1,081	116
Industry	657	713	757	850	902	153
Electricity	28	38	42	43	50	224
Construction	102	169	192	221	214	198
Total commodity sector	1,713	1,778	1,972	2,155	2,247	136
Transportation and communication	235	269	292	331	350	164
Trade, commerce, and finance	334	349	354	341	373	125
Housing	170	175	179	181	185	111
Public utilities	15	16	17	18	16	110
Other services	669	659	709	764	882	144
Total service sectors	1,423	1,468	1,551	1,635	1,806	138
Total all sectors	3,136	3,246	3,523	3,790	4,053	137

^a Including irrigation, drainage, and the High Dam.

^b Including Suez Canal improvements.

SOURCE: U.A.R. Central Agency for Public Mobilization and Statistics, Selective Statistics, 1952-1966 (Cairo: Dar Memphis, 1967), p. 123; Ali Sabri, Years of Social Changes and the First Five-Year Plan (Cairo: Dar El-Maarif, 1966), p. 86.

at the .05 level and the coefficient of determination (r^2) was .981 which indicates strongly that a growth trend did exist.

The relationship between public investment and income for agriculture and for the total economy is given in Table 41.

The population increased from 25.8 million in 1960 to 29.4 million in 1965, an average compound rate of increase in population during the plan of 2.65 percent (Table 42). The number of families increased from 5.1 million in 1960, to 5.8 million in 1965.⁸ Income per family increased from \$579 to \$699, an increase of 21 percent. Income per capita increased from \$115 in the base year to \$138 in 1965, an increase of 20.3 percent. When per capita income in units of a dollar during the plan period was regressed on time in years a linear coefficient of 4.78, and standard error of .43, significant at .05 level, were found. The coefficient of determination (r^2) was .968, which indicates that there was a positive time trend in per capita income. The average compound rate of growth in per capita income during the plan was 3.8 percent.

The linear coefficient of per capita income from agriculture in dollars regressed on years was .34 with a standard error of .49, which was not significant at the .05 level. The coefficient of determination (r^2) was only .105. Thus, there was no significant trend in the per capita income from agriculture.

Per capita consumption of goods and services increased by 19 percent during the plan, while consumption per family increased by 21 percent.⁹ This means that the average level of living for families

⁸Ali Sabri, Years of Social Changes and the First Five-Year Plan (Cairo: Dar El-Maarif, 1966), p. 50.

⁹Ibid., pp. 51-53.

Table 41.--Public Investment and Income in Agriculture Compared with the Total Economy, Based on Current Dollars, Egypt, 1960 to 1965
Fiscal Years

Item and unit	1960	1961	1962	1963	1964	1965
(1) Agr. income as percent of total	31.5	29.5	26.4	27.1	27.3	28.0
(2) Invest. as percent of income in:						
(a) Total	13.3	16.5	17.8	19.1	21.4	19.3
(b) Agr.	7.3	9.4	14.0	17.4	25.5	16.9
(3) Change from preceding year, million dollars in:						
(a) Total income	294.4	180.0	110.0	348.0	407.0	332.0
(b) Total invest.	-23.0	124.0	60.0	110.0	168.0	-18.0
(c) Agr. income	94.3	-6.0	-68.0	120.0	114.0	123.0
(d) Agr. invest.	8.0	19.0	33.0	50.0	65.0	-30.0
(4) Ratio of change in income/change in investment:						
(a) Total	-	1.5	1.8	3.2	2.4	-
(b) Agr.	11.8	-	-	2.4	1.8	-

SOURCE: Calculated from data in Tables 26, 38 and 39.

Table 42.--Population, National Income, and Growth Rates, Egypt, 1960 to 1965 Fiscal Years

Year	Population		National income in 1960 prices			
	Number	Change from preceding year	Total	Per capita	Change from preceding year	
					Total	Per capita
	(Million)	(Percent)	(Million dollars)	(Dollars)	(Percent)	(Percent)
1960	25.8	3.10	2956	115	-	-
1961	26.6	3.10	3136	118	6.1	2.9
1962	27.3	2.63	3246	119	3.5	0.9
1963	27.9	2.20	3523	126	8.5	6.2
1964	28.7	2.87	3790	132	7.6	4.6
1965	29.4	2.44	4053	138	6.6	4.4

SOURCE: Calculated from data in Table 39; U.A.R. Central Agency for Public Mobilization and Statistics, Yearbook for General Statistics, 1952-67 (Cairo: Nahdet Misr Publication House, 1968), p. 20.

and individuals was raised by about one-fifth over the level of living before the plan. The increases in per capita consumption of individual items are given in Table 43.

Production Realized

Value of realized production in current prices amounted to \$8,597 million in 1965 and thus exceeded the planned value of \$8,282 million (Table 44). However, in constant prices real production in 1965 amounted to \$7,960 million or 3.9 percent below planned production (Table 45). Thus the value of production increased by 35.8 percent in terms of real prices compared to the planned increase of 41.3 percent.

The value of agricultural production in the last year of the implementation of the plan was 18 percent above the base year. Increases in agricultural production come from land already under cultivation, as the reclaimed land, which amounted to 557,000 acres during the plan, will not be at full productive capacity until the second 5-year plan, 1965 to 1970, is in operation. Thus, the increase in agricultural production was the result of increased productivity and yields per acre on the area already in use. Agricultural development is discussed in further detail later in this Chapter.

Value of industrial production at base year prices increased by 38 percent. The increase in quantities of production of some of the main industrial products are given in Table 46.

The value of electricity production at base year prices increased

Table 43.--Per Capita Consumption of Goods and Services, Egypt, 1960 and 1965 Fiscal Years

Item	Unit	1960	1965	Percentage increase
Wheat	Kg.	107.6	121.1	12.5
Maize	Kg.	62.6	76.8	22.7
Beans	Kg.	8.6	10.1	17.4
Sugar	Kg.	12.9	15.6	20.9
Tea	Kg.	0.8	1.1	37.5
Shortening	Kg.	0.6	1.5	150.0
Eggs	No.	26.8	31.4	17.1
Materials and cotton	Meters	16.1	16.5	2.5
Soap	Kg.	2.7	3.9	44.4
Medicine and drugs	Dollars	1.2	2.4	100.0
Gas	Kg.	0.7	1.8	157.1
Refrigerators	Per 1,000 people	0.4	1.1	175.0
Stoves	Per 1,000 people	1.4	1.7	21.4
Televisions	Per 1,000 people	-	1.7	-

SOURCE: Ali Sabri, Years of Social Changes and the First Five-Year Plan (Cairo: Dar El-Maarif, 1966), p. 53.

Table 44.--Values of Production in Current Prices, Egypt, 1960 to 1965 Fiscal Years

Sector	1960	1961	1962	1963	1964	1965
---Million dollars---						
Agriculture ^a	1,338	1,340	1,299	1,439	1,557	1,708
Industry	2,499	2,650	2,756	3,161	3,460	3,734
Electricity	42	51	65	73	80	90
Construction	235	231	326	382	474	417
Commodity sectors	4,114	4,272	4,446	5,055	5,571	5,949
Transportation and communication ^b	312	337	369	420	481	532
Finance and trade	380	451	442	467	504	533
Housing	175	178	183	186	189	191
Public utilities	25	26	28	29	30	34
Other services	854	912	919	1,098	1,285	1,358
Services sectors	1,746	1,904	1,941	2,200	2,489	2,648
Grand total	5,860	6,176	6,387	7,255	8,060	8,597

^aIncluding irrigation, drainage, and the High Dam.

^bIncluding the Suez Canal.

SOURCE: U.A.R. Central Agency for Public Mobilization and Statistics, Selective Statistics, 1952-1966 (Cairo: Dar Memphis, 1967), p. 121; U.A.R.C. A.P.M.S., Statistical Handbook, 1952-1965 (Cairo: Dar Memphis, 1966), p. 209.

Table 45.—Real Gross National Product by Sectors at 1960 Prices, Egypt, 1960 to 1965 Fiscal Years

Sector	1960	1961	1962	1963	1964	1965	Percentage increase 1965 over 1960
Agriculture	1,338	1,327	1,274	1,425	1,527	1,581	18
Industry	2,499	2,624	2,702	3,130	3,392	3,458	38
Electricity	42	50	64	72	78	83	96
Construction	235	229	319	378	464	386	64
Total commodity sectors	4,114	4,230	4,359	5,005	5,461	5,508	34
Transportation and communication	312	334	362	415	471	493	58
Trade, commerce and finance	380	446	433	462	494	494	30
Housing	175	176	179	185	186	177	1
Public utilities	25	26	27	29	30	31	23
Other services	854	903	902	1,087	1,260	1,257	47
Total services sectors	1,746	1,885	1,903	2,178	2,441	2,452	40
Grand total	5,860	6,115	6,262	7,183	7,902	7,960	36

SOURCE: Calculated from Table 6, U.A.R. Ministry of the Treasury, Draft of the State Budget for the Fiscal Year, 1965-1966 (Cairo: General Organization for Government Printing Offices, 1965), p. 6.

Table 46.--Production of Main Industrial Products, Egypt,
1960 and 1965 Fiscal Years

	Unit	1960	1965	Percentage increase
Crude petroleum	Mil. tons	3.1	6.3	99
Iron ore	Thous. tons	243.1	510.9	110
Manufactured sugar	Thous. tons	336.0	404.0	20
Shortening	Thous. tons	16.0	44.0	175
Cotton-seed oil	Thous. tons	103.6	127.8	23
Macaroni	Thous. tons	32.5	54.3	67
Cotton yarn	Thous. tons	98.1	136.1	39
Cotton cloth	Thous. tons	68.8	84.3	23
Benzine	Thous. tons	341.0	758.0	122
Solar	Thous. tons	302.0	982.0	225
Kerosene	Thous. tons	302.0	924.0	206
Sodium chloride	Thous. tons	4.0	17.0	324
Nitrate fertilizers	Thous. tons	277.0	945.0	241
Phosphate	Thous. tons	178.3	265.7	49
Trucks	No.	307	948	209
Cars	No.	120	4,386	3,555
Buses	No.	126	400	218

SOURCE: Ali Sabri, Years of Social Changes and the First Five-Year Plan (Cairo: Dar El-Maarif, 1966), p. 61.

by 96 percent. The following figures show the development of the electric power output between 1960 and 1965.¹⁰

<u>Year</u>	<u>Power output in million K.W.H.</u>	<u>Percentage increase over preceding year</u>
1960	2,639	-
1961	3,622	37.2
1962	4,110	13.6
1963	4,178	1.7
1964	5,106	22.2
1965	5,475	7.2

Electric power generated increased by 108 percent in the last year of the plan over the base year. The electric power consumed increased from 1,765 million K.W.H., in 1960 to 4,048 million K.W.H., in 1965, an increase of 129 percent. From the total electric power consumed in 1965, the share of industry amounted to 2,794 million K.W.H., 69 percent of the total, of which 1,651 K.W.H. were used in chemical industries, fertilizers, and iron and steal. The power consumed in lighting amounted to 528 million K.W.H., or 13 percent of the total, and 358 million K.W.H. of these were used in domestic lighting and other uses. The value of the total commodity sectors increased by 34 percent in the last year of the plan over the base year.

Education, health, and social services increased by 47 percent when valued on the basis of factor costs. There was an increase of 28 percent and 9 percent in the number of classrooms and schools, respectively, for primary education. The number of classrooms and schools, respectively, increased 40 percent and 22 percent for

¹⁰Federation of Industries in the U.A.R., Yearbook, 1966 (Cairo: S.O.P. Press, 1966), pp. 81-82.

preparatory education, and 12 percent and 7 percent for secondary education. With respect to college education, the number of enrolled students increased from 82,510 to 119,041, an increase of 44 percent during the plan period, while the number of new students admitted to the universities increased from 17,957 in 1960 to 25,847 in 1965, an increase of 44 percent.

The value of health services was increased by 52 percent. The number of health service units was increased by 58 percent from 2,357 to 3,735 units. In the rural areas the increase was 90 percent, from 649 to 1,230. Also the number of hospital beds was increased by 9 percent in the whole country, from 56,676 in 1960 to 61,755 in 1965, while the increase in the number of hospital beds in the rural areas was 8 percent, from 6,915 to 7,500 beds.

Lags in Income from Investments

The first 5-year plan built the base for economic growth, and gave the economy a "big push." Many of the benefits from investment during the plan period are expected to arise at a later date, rather than during the period in which they were made. The new land which was reclaimed during the plan is scheduled to be at full productive capacity during the second plan period from 1965 to 1970.

Many of the factories which had been built during the plan were not yet in production or were producing at levels less than capacity at the end of the plan period. In the second plan these factories are expected to be ready for operation at full productive capacity.

The major projects such as the High Dam and mining projects, which absorbed a large portion of the investments executed during the first plan will start production during the second 5-year plan period.

Progress of Agriculture Under the Plan

In agriculture a base of one year can be quite misleading due to wide year-to-year variations that result from uncontrollable factors, such as the weather conditions. Thus the procedure used here was to test for differences in means between 1956 to 1960 and 1961 to 1965, for selected major crops in Egypt.

There was a large decline in cotton production in 1961, a 20 percent drop from the 1956-60 average (Table 47). This reduction was attributed to the unusually severe attack by cotton worms and boll weevils during the 1960-61 season. The differences in the means of production, acreage, and yield of cotton lint between the two periods 1956-60 and 1961-65 were not significant at the .05 level.

The reduction in cotton acreage may have been a result of the loss of confidence of the farmers after the severe losses in 1961, the more restrictive laws, and the new three-year rotation.

Production of wheat remained relatively stable during the 1961-65 period (Table 48). The mean differences in acreage and in yield of wheat were significantly different between the two periods, 1956-60 and 1961-65, at the .05 level. But there was no significant differences in the production means between the two periods as the yield increase was off-set by an acreage decrease.

Production, acreage, and yield means of maize in 1961-65 show significant differences from the means in 1956-60 at the .05 level (Table 49). The increase in yield more than off-set the decrease in

Table 47.--Cotton Lint: Production Acreage, and Yield, Egypt, 1956 to 1965

Year	Production (1,000 Metric tons)	Acreage (1,000 Acres)	Yield per acre (Pounds)	Rates of change from 1956-60 means		
				Production (Percent)	Acreage (Percent)	Yield (Percent)
1956-60 mean	442	1,870	496	-	-	-
1961	336	2,061	359	-20.4	10.2	27.6
1962	457	1,720	586	8.3	- 8.0	18.1
1963	442	1,689	577	4.7	- 9.7	16.3
1964	504	1,672	665	19.4	-10.6	34.1
1965	521	1,972	582	23.5	55.5	17.3
1961-65:						
mean	452	1,823	554	7.1	- 2.5	11.7
s.e. ^a	42	93	57	-	-	-

^aPooled standard error; calculated t values of 0.714, 0.505, and 1.017 for production, acreage, and yield, respectively; tabular value of t at the .05 level is 1.860 for probability of a greater difference using the "one tail" test.

SOURCE: U.A.R. Central Agency for Public Mobilization and Statistics, Yearbook for General Statistics, 1952-67 (Cairo: Nahdet Misr, 1968), pp. 23-38; United Nations, Department of Economic and Social Affairs, Statistical Yearbook, 1967 (New York: 1968), pp. 113-123.

Table 48.--Wheat: Production, Acreage, and Yield, Egypt, 1956 to 1965

	Production Acreage		Yield per acre (Pounds)	Rates of change from 1956-60 means		
	(1,000 Metric tons)	(1,000 Acres)		Production	Acreage	Yield
1956-60 mean	1,473	1,545	2,102	-	-	-
1961	1,436	1,437	2,189	- 2.5	- 7.0	4.1
1962	1,593	1,510	2,326	8.1	- 2.2	10.7
1963	1,493	1,396	2,358	1.4	- 9.6	12.2
1964	1,499	1,344	2,459	1.7	-13.0	17.0
1965	1,272	1,189	2,359	-13.6	-16.5	12.2
1961-65:						
mean	1,458	1,375	2,338	- 1.0	-11.0	11.2
s.e. ^a	58	60	49	-	-	-

^a Pooled standard error; calculated t values of 0.259, 2.833, and 4.816 for production, acreage, and yield, respectively; tabular value of t at the .05 level is 1.860 for probability of a greater difference using the "one tail" test.

SOURCE: U.A.R. Central Agency for Public Mobilization and Statistics, Yearbook for General Statistics, 1952-67 (Cairo: Nahdet Misr, 1968), pp. 23-38; United Nations, Department of Economic and Social Affairs, Statistical Yearbook, 1967 (New York: 1968), pp. 113-123.

Table 49.--Maize: Production, Acreage, and Yield, Egypt, 1956 to 1965

Year	Production Acreage		Yield per acre	Rates of change from 1956-60 means		
	(1,000 Metric tons)	(1,000 Acres)		Production	Acreage	Yield
1956-60 mean	1,619	1,918	1,861	-	-	-
1961	1,617	1,664	2,142	- 0.1	-13.2	15.1
1962	2,004	1,902	2,323	23.8	- 0.8	24.8
1963	1,867	1,786	2,305	15.3	- 6.9	23.9
1964	1,934	1,723	2,475	19.5	-10.7	33.0
1965	2,172	1,506	3,134	34.2	-21.5	68.4
1961-65:						
mean	1,919	1,716	2,476	18.5	-10.5	33.0
s.e. ^a	105	73	179	-	-	-

^aPooled standard error; calculated t values of 2.857, 2.781, and 3.436 for production, acreage, and yield respectively; tabular value of t at the .05 level is 1.860 for probability of a greater difference using the "one tail" test.

SOURCE: U.A.R. Central Agency for Public Mobilization and Statistics, Yearbook for General Statistics, 1952-67 (Cairo: Nahdet Misr, 1968), pp. 23-38; United Nations, Department of Economic and Social Affairs, Statistical Yearbook, 1967 (New York: 1968), pp. 113-123.

acreage and thus the increase in production was significant. The increase in yield after 1962 is believed to have been the result of the use of improved hybrid seeds, larger quantities of fertilizers, new techniques of production, and more effective methods of pest control rather than to random variations in the data.

Both acreage and yield of rice and consequently production increased in 1961 to 1965 over the 1956-60 averages (Table 50). However, these differences were not significant at the .05 level. Acreage decreased in 1961, due to the insufficient water supply in that year.

Both production and acreage means of onions in 1961-65 show significant differences from the 1956-60 means. But the onion yield difference was not significant at the .05 level. There is a high probability that there were increases in acreages and production during the 1961-65 period (Table 51). In 1961 onion yield declined by 11.3 percent below 1956-60 mean. This reduction was attributed to the insufficient water supply in that year.

From 10 to 13 percent of the increase in production of major crops in Egypt during 1961 to 1965 is attributed to increases in yields per acre (Table 52).

Food and Agriculture Organization estimates indicate that there were increases in aggregate agricultural production and food production during the five years of the plan. However, the increases were about equal to population growth and thus the per capita figures remained rather constant with the exception of the sharp reductions in 1961 (Table 53). The rather constant level of per capita production during the plan period was about 13 percent above the 1952-56 base.

Indices of agricultural production published by the U.S. Department

Table 50.--Rice: Production, Acreage, and Yield, Egypt, 1956 to 1965

Year	Production (1,000 Metric tons)	Acreage (1,000 Acres)	Yield per acre (Pounds)	Rate of change from 1956-60 means		
				Production (Percent)	Acreage (Percent)	Yield (Percent)
1956-60						
mean	1,433	700	4,513	-	-	-
1961	1,142	557	4,520	-20.3	-20.4	0.2
1962	2,038	862	5,212	42.2	23.1	15.5
1963	2,219	995	4,916	54.8	42.1	8.9
1964	2,036	999	4,493	42.1	42.7	-0.4
1965	1,788	880	4,479	24.8	25.7	-0.8
1961-65:						
mean	1,844	858	4,724	28.7	22.6	4.7
s.e. ^a	258	90	159	-	-	-

^aPooled standard error; calculated t values of 1.593, 1.756, and 1.327 for production, acreage, and yield, respectively; tabular value of t at the .05 level is 1.860 for probability of a greater difference using the "one tail" test.

SOURCE: U.A.R. Central Agency for Public Mobilization and Statistics, Yearbook for General Statistics, 1952-67 (Cairo: Nahdet Misr, 1968), pp. 23-38; United Nations, Department of Economic and Social Affairs, Statistical Yearbook, 1967 (New York: 1968), pp. 113-123.

Table 51.--Onion: Production, Acreage, and Yield, Egypt, 1956 to 1965

Year	Production (1,000 Metric tons)	Acreage (1,000 Acres)	Yield per acre (Pounds)	Rates of change from 1956-60 means		
				Production (Percent)	Acreage (Percent)	Yield (Percent)
1956-60 mean	490	56	19,290	-	-	-
1961	543	70	17,101	10.8	25.0	-11.3
1962	602	63	21,067	22.9	12.5	9.2
1963	696	71	21,611	42.0	26.8	12.0
1964	675	63	23,621	37.8	12.5	22.5
1965	694	60	25,500	41.6	7.1	32.2
1961-65:						
mean	642	65	21,780	31.0	16.1	12.9
s.e. ^a	41	3	1,470	-	-	-

^aPooled standard error; calculated t values of 3.707, 3.000, and 1.694 for production, acreage, and yield, respectively; tabular value of t at the .05 level is 1.860 for probability of a greater difference using the "one tail" test.

SOURCE: U.A.R. Central Agency for Public Mobilization and Statistics, Yearbook for General Statistics, 1952-67 (Cairo: Nahdeit Misr, 1968), pp. 23-38; United Nations, Department of Economic and Social Affairs, Statistical Yearbook, 1967 (New York: 1968), pp. 113-123.

Table 52.--Effects of Yield Increases on Production of Selected Crops, Egypt, 1961 to 1965

Crop	Realized average annual produc-	Estimated average annual production with 1956-60	Increases in produc-
	tion 1961-65 (1,000 Metric tons)	yields (1,000 Metric tons)	tion as a result of yield increases (Percent)
Cotton lint	452	410	10.2
Wheat	1,458	1,311	11.1
Maize	1,919	1,448	13.2
Rice	1,844	1,756	10.5
Onion	642	569	11.3

SOURCE: Calculated from Tables 47 through 51.

Table 53.--Indices of Agricultural and Food Production,
Total and Per Capita, Egypt, 1952 to 1966

Year	Total production	Food production	Per capita	
			Total	Food
1952-1956=100				
1952	96	86	101	91
1953	92	93	95	96
1954	102	103	102	103
1955	103	105	100	103
1956	107	112	102	107
1957	115	115	107	107
1958	116	112	106	103
1959	121	119	108	106
1960	127	125	111	109
1961	112	117	95	99
1962	136	138	112	114
1963	137	141	111	114
1964	143	143	112	112
1965	148	148	113	113
1966	144	149	112	113

SOURCE: United Nations, Food and Agriculture Organization, Production Yearbook, 1967, Vol. 21 (Rome: 1968), pp. 27-31.

of Agriculture show per capita output during the plan period at a level about equal to a 1957-59 base and reductions in the three succeeding years (Table 54). Sufficient information is not available to account for the differences in the different estimates, other than different base periods, nor to judge the accuracy of the different sources.

Distribution of Income Under the Plan

During the first 5-year plan there was a shift in the relative shares of factors in the national income. In 1960 wages were \$1,264 million or 42.8 percent of total income of \$2,956. Other factors such as interest, profits, and rent were \$1,692 million or 57.2 percent. In 1965 wages amounted to \$1,872 million or 46.2 percent of the total real income of \$4,053.¹¹ The other factors' share was \$2,181 million, or 53.8 percent. Thus wages' percentage share of national income increased by 3.4 points during the plan period over the base year. But changes in the welfare of the workers will also depend on the extent to which this increase resulted from an increase in number of persons and on changes in the purchasing power of any given income level.

The number of workers increased from about 6.0 million to 7.3 million during the plan period. At the same time total wages in constant values increased from \$1,264 million in 1960 to \$1,872 million in 1965, an increase of \$608 million. At constant wage rates the total increase would have been \$279 million (Table 55). Thus the workers' share from real national income increased by \$329 million in terms of real wages.

¹¹ Ali Sabri, op. cit., p. 69.

Table 54.--Indices of Agricultural and Food Production, Egypt, 1959 to 1968

Year	Total		Crops	Per capita	
	Agric.	Food		Agric.	Food
-----1957-1959=100-----					
1959	103	102	103	101	100
1960	108	107	111	103	102
1961	97	105	96	90	97
1962	114	118	115	103	107
1963	113	118	115	100	104
1964	115	115	117	99	99
1965	118	117	121	98	97
1966	115	119	117	94	97
1967	115	121	117	92	96
1968 ^a	114	121	116	89	94

^aPreliminary.

SOURCE: U.S. Department of Agriculture, Economic Research Service, Indices of Agricultural Production, 1959-1968, in Africa and the Near East, ERS-Foreign 265 (Washington, D.C.: U.S. Government Printing Office, June, 1969), p. 49.

Table 55.--Estimate of Increase in Total Wages as a Result of Changes in Wages and in Number of Workers, Egypt, 1960 and 1965

Item	Total real wages (Million dollars)	Number of Workers (1,000)
Realized in 1960	1,264	6,006
Realized in 1965	1,872	7,333
Realized increase during the Plan	608	1,327
Total wages in 1965 with wages at 1960 level	1,543	-
Increase in wages of the new workers with wages at 1960 level	279	-
Increase in real wage bill	329	-

SOURCE: Ali Sabri, Years of Social Changes and the First Five-Year Plan (Cairo: Dar El-Maarif, 1966), p. 73.

Changes that occurred by sector of the economy are given in Table 56. There was an increase in annual real wages per worker in all sectors of the economy. The highest percentage increase occurred in agriculture. However, the difference between wages in agriculture and those in the other sectors is still quite large and in actual dollars this difference increased as shown in the following summary of the amount by which annual wages in other sectors exceeded those in agriculture:

Sector	<u>1960</u> (Dollars)	<u>1965</u> (Dollars)
Industry	270	286
Electricity	395	453
Transportation and communication	345	364
Commerce and trade	185	198
Housing	75	86
Public utilities	424	438
Other services	315	349

Real personal income is affected by the amount of public goods and services provided free to individuals and families. Free education and health services are of particular importance. The estimates of contributions of those services to the people's real income in 1965, were: education, \$51.8 million, which equals the fees which would be paid by students if the education was not free;¹² and expansion in free

¹²All Sabri, op. cit., p. 76.

Table 56.--Real Annual Average Wages by Sector and Changes Between 1960 and 1965

Sector	Average real wages per worker		Amount of increase (Dollar)	Rate of change (Percent)
	1960 (Dollar)	1965 (Dollar)		
Agriculture	69	93	23	33.4
Industry	339	379	40	11.7
Electricity	464	546	82	17.7
Transportation and communication	414	457	43	10.5
Commerce and trade	254	291	38	14.8
Housing	144	179	35	24.7
Public utilities	493	531	38	7.8
Other services	384	442	58	15.0

SOURCE: Ali Sabri, Years of Social Changes and the First-Year Plan (Cairo: Dar El-Maarif, 1966), p. 75.

health service, \$17.9 million.¹³ If the saving in real income resulting from increases in free education and free health services is added to the increase in the real wage bill, the total increase would amount to \$398.3 million. A more than proportionate share of the increases in free education and health services went to people in the lower income levels. The realized employment of 7,333 thousand workers, compared to 7,000 thousand workers planned, shows that the employment target was reached.

Consumption Under the Plan

Social, political and economic structures were changed by means of laws and decrees that were executed during the plan period. As a result of these changes lower income people were able to increase their consumption. Several important factors which led to increased purchasing power and consumption during the plan period include such matters as the increase in income, accompanied by an increase in number of workers employed and a larger share of income received by persons at the lower income levels who have a particularly high propensity to consume. The increase in population was another factor and the rate of 2.6 percent was higher than the 2.3 percent which was estimated for the plan period. The decline in the death rate, which was 14.8 per thousand in 1965 compared to 16.9 per thousand in 1960,¹⁴ as a result of increased health care, the rise in the level of living, and the improvement in the nutrition probably accounted for the higher population growth rate.

¹³Ali Sabri, op. cit., pp. 77-78.

¹⁴U.A.R. Central Agency for Public Mobilization and Statistics, Yearbook for General Statistics, 1952-67 (Cairo: Nahdet Misr, 1968), p. 17.

The large increase in government services also added to the consumption increases. Value of consumption increased from \$2,759 million in 1960 to \$3,685 million in 1965, in base year prices. This represents an increase of 33.5 percent in base year prices over the 1960 level, compared to a planned increase of 25 percent.

Problems and Obstacles to Development during the Plan Period

From the reports of Ali Sabri, Minister of Planning,¹⁵ and Abd El-Moneim El-Kaissouni, Deputy Prime Minister for Economic and Financial Affairs,¹⁶ it appears that the first 5-year plan was subject to many problems and obstacles. Nine problems of special significance were enumerated.

Slow Rate of Growth in First Two Years

The income target called for an increase of 7.25 percent annually, during the first phase of the plan, which would have produced an increase of 14.5 percent by the end of the second year of the plan. Realized income in the second year of the plan amounted to only \$3,246 million, an increase of 9.8 percent instead of the planned 14.5 percent. The slower rate of growth was attributed to the decline in agricultural income during the first year of the plan, as a result of the severe attack on the cotton crop by cotton worms and boll weevils. While cotton is frequently attacked by these insects, this attack was the worst one on record in Egypt's history. The lack of water for irrigation

¹⁵ Ali Sabri, op. cit., pp. 84-111.

¹⁶ Ministry of the Treasury, Draft of the State Budget for the Fiscal Year, 1965-66 (Cairo: General Organization for Government Printing Offices, 1965), pp. 4-42.

brought with it an unexpected deficiency in the rice crop. The decline in agricultural production and income spread over other sectors of the economy, especially those which depended on agricultural production directly and those which depended on imports purchased with foreign exchange earned by cotton and rice exports. The decline in cotton exports accounted primarily for the deficit in the balance of payments in that year which amounted to \$328 million.¹⁷

Furthermore, in July, 1961, there were the social laws and decrees, which resulted in a sharp increase in consumption by the people who benefited from these laws. This resulted in a decline in the domestic saving in the second year of the plan, even below the level of the base year 1960. This decline in savings can be seen from the following figures:¹⁸

Year	<u>Domestic savings</u>
	(Million dollars)
1960	404.6
1961	483.2
1962	378.8
1963	449.9
1964	544.6
1965	663.3

¹⁷ Federation of Industries in the U.A.R., Yearbook, 1966 (Cairo: S.O.P. Press, 1966), p. 27.

¹⁸ Ali Sabri, op. cit., p. 89.

With the decline in domestic savings and in exports, the Country was forced to depend upon heavy borrowing from external sources. Consequently, the country was forced to expand its use of short-term loans from foreign banks to finance its imports. These short-term loans increased the pressure on the country's gold revenue, and required higher rates of interest.

Delay in Implementation of Some Major Projects

The rate of implementation of the High Dam project was one year behind schedule up to the fall of 1962. Also, there were delays in moving the Nubian to Kum-Ombo, which resulted from the delay in the construction of 33 villages including the public utilities, services, and the agriculture land needed to support the 17,000 people. The delays in the project to transform the arable land under basin irrigation to prennial irrigation delayed the land reclamation projects.

After the second year the plan was revised and reevaluated to concentrate on those projects which were behind schedule. The results of this concentration were as follows: (1) building and construction materials were made scarce for the housing sector; (2) some "bottle-necks" appeared in the transportation and construction sectors and the private sector, which owned the transportation facilities and building facilities, took advantage of these shortages and raised the prices of construction materials and the means of transportation, and this effect remained in the subsequent years of the plan; (3) a very large portion of the wages earned by workers on new development projects was spent mostly on consumption, as those who received these wages were in low income groups with a high propensity to consume, and the increase

in the demand for consumer goods could not be matched immediately by increases in the production of such goods and services -- shortages and inflation resulted.

The Imbalance and Lack of Coordination Among Sectors

The Egyptian economy inherited a policy in which every organization planned projects only in terms of the sector to which it belonged and for its benefit, even if it resulted in negative effects on the other sectors. The result was that each sector went ahead in the execution of its projects, without sufficient coordination and regard for mutual relationships with the projects in other sectors. For instance, the hospitals were built while the equipment, staff, technicians, and medical doctors needed for their operation were not available. Factories were constructed before the necessary electric power was installed and machinery was delivered to factories before they were constructed, or before the necessary roads were built. There were other cases where the factory was completed, but the raw materials were not available. The Follow-Up Committee of the Plan discovered that some projects had been completed, without the knowledge of the main organization responsible for its implementation, because of the lack of coordination between the responsible organization and the bidding organization. The Follow-Up Committee of the Plan discovered and corrected these mistakes in the last two years of the plan.

The Incompleteness of the Public Sector

The Supreme Council of Public Organization with 38 Specialized Public Organizations, established in 1961, faced major problems. The

inability to obtain sufficient number of personnel for technicians, trained and skilled labor, managers, and capable leaders, which were necessary for the public sector to play its leading role during the plan period, resulted in delays in carrying out some of the major projects at the beginning of the plan period. The problem of finding highly qualified scientific and experienced leaders for the public sectors, was particularly difficult to solve. It was necessary either to delay the expansion of the public sector until the country had qualified and skilled leaders available, or to go ahead with available under-qualified staff at the beginning and then try to revise that leadership by continuing to put in new and qualified persons as they become available. The latter policy was followed.

"Bottle-Necks" of which the Private Sector Took Advantage

Any development process usually is accompanied by some "bottle-necks" which result from the shortage of particular consumer goods as a result of an increase in demand. This is especially true for goods of which imports are the only source and goods that are available only in a particular period during the year. The consumers themselves tend to increase the pressure by buying and storing these goods. The inefficiency and inability of the public sector to carry its responsibility in the development process in Egypt, resulted in "bottle-necks" which gave the private sector the chance to create additional "bottle-necks" in the economy. For example, when a reduction in supplies of an item was anticipated sellers created a false shortage in supply by holding quantities off the market and increasing their prices. In other cases, the inability of the public sector to carry out some of the major

projects opened the door for the private contractors to build these major projects. As a result, they took advantage of the situation and raised the charges for these projects; consequently, monopolistic practices resulted in higher profits to the contractors. The increase in the cost of construction and building projects, appeared clearly in the third year of the plan, where costs of construction in that year increased by 25 percent over 1960, and the large portion of that excess was in the form of profit to the contractors. This situation also reduced the rate of increase for the share of income distributed to labor and the low-income families.

Heavy Debts to Foreign Countries

The executed investments during the plan amounted to \$3,480 million, of which \$2,521 million were financed from internal sources, and \$959 million from foreign sources. There is no doubt that heavy debts put pressure on the economy. But the question now, is would the growth rate of the national income realized during the plan period have reached the levels that it did if the economy had depended only on internal capital? El-Kammash answered "No" to that question.¹⁹

Potentials for Export Were not Exploited

The deficit between values of imports and exports during the plan period resulted from the fact that at the time of the preparation of the plan in 1959, adequate support was not given to industries producing primarily for export. Priorities were given to industries producing

¹⁹ El-Kammash, Economic Development and Planning, pp. 310-331.

for the domestic market. These export goods have the qualities to compete with the foreign goods in the foreign markets. For example, there is an increasing demand for Egyptian cotton textile products. Cotton yarn exports amounted to 41,156 tons in 1965 compared to 27,590 tons in 1964, and cotton textiles exports were 14,496 tons in 1965 compared in 13,296 tons in 1964.²⁰ The same thing can be said about petroleum products, cement, sugar, leather products, and clothes. Exports of cement amounted to 310,000 tons in 1965 compared to 158,000 tons in 1964, sugar amounted to 748 tons in 1965 compared to 451 tons in 1964, and shoes were 294,000 pairs in 1965 compared to 242,000 pairs in 1964.²¹

In the field of agricultural commodities, attempts should have been made to introduce new products such as vegetables, fruits, flowers, and garlic into the export market in addition to increasing exports of the traditional commodities of cotton, rice, and onions.

The Vast Increase in Consumption

During the plan period imports of wheat and flour nearly quadrupled, from \$42.3 million to \$166.3 million between 1960 and 1965.²² Consumption per capita was increasing over time, a matter which presented an obstacle to development for two reasons. First, the increase

²⁰Federation of Industries in the U.A.R., Yearbook, 1966 (Cairo: S.O.P. Press, 1966), p. 41.

²¹Ibid., pp. 39-41.

²²Ibid., pp. 34-35.

in consumption limited the capacity to save, and the increase in population resulted in slower rates of economic growth per capita.

Secondly, increases in imports of consumption goods reduced the amount of foreign exchange available for importing capital goods needed for development.

Other Problems

There were other problems such as the rate of population growth which was 2.6 percent compared to the expected rate of 2.3 percent. The government tried to keep this problem under control by means of birth control programs, even supplying pills free or with minor charges. It changed the payroll program by raising the salary only for the first child instead of the former program which gave increases for the first three children. It used radio, television, and other methods to reach the masses with information. Finally, the religious leaders were asked to speak in the mosques and churches in favor of the birth control program. However, the birth rate increased. The increase in wages and salaries resulted in increased marriage rates, which, in turn, brought about higher birth rates.

Another problem was the hostilities in Yemen. There is no doubt that these affected the results of the plan.

Chapter VI

SUMMARY AND CONCLUSIONS

Major structural changes were made in the Egyptian economy in 1952 and later years, particularly during 1961 to 1965, the first five years of the development plan implementation period. The hypothesis under study was that these changes contributed to more rapid development and economic growth of Egypt. The study was designed to measure the rates of economic growth, and to identify and where possible to measure factors that have affected economic growth. These factors include such elements as investments in human, natural, and capital resources and institutional changes. Particular emphasis in the analysis was placed on agriculture.

The period of time was divided into three subperiods, namely, before 1952, 1952 to 1960, and after 1960. These periods were selected in order to coincide with structural changes known to have taken place in the socio-political economy of Egypt.

From 1937 to 1952, per capita income at constant prices declined in nine years and increased in six years. While the average per capita income in the last five years of this period was higher than income in the first five years, it is very doubtful that any sustained growth was indicated in view of the wide year-to-year fluctuations and the likelihood of cyclical patterns. Income per capita in 1952 was \$82, the same as in 1937.

Following the Revolution in 1952 and subsequent years, there were important institutional changes and the public sector began to play a

more positive role in development. Implementation of the first 5-year plan began in 1961.

In agriculture, the land tenure, land distribution, and credit systems were changed. Cooperatives, staffed and supervised by government employees, were established for supplying credit, material inputs, and product market facilities to farmers. Projects in irrigation, drainage, land reclamation, land settlements, and land consolidation were initiated by the Government. Educational and research programs were extended and reoriented toward more practical aspects of agriculture. Inputs of fertilizers, improved seeds, and other factors were increased. Public investment in agriculture increased from \$32 million in 1953 to \$68 million in 1960. In 1964, public investment in agriculture reached \$235 million. Total public investment in agriculture for 1956-60 was \$265 million compared with \$817 million in 1961-65. In general, actions taken were those believed to be consistent with those needed to accelerate agricultural development and growth. However, a large share of these programs were devoted to developing the infrastructure, and substantial time lags between inputs and outputs are to be expected.

Cultivated area increased only 3 percent between 1952 and 1960 but crop intensity, which indicates the increase in multiple cropping, increased 12 percent. While the yields and production of major crops at the end of the decade of the 1950's were higher than at the beginning, statistical tests indicate a high probability that these increases were within the range of normal variations with the exception of onions. FAO indices of total agricultural production and food production, both in the aggregate and on a per capita basis, showed an upward trend. While there was a significant increase in total agricultural income, the changes

in agricultural income per capita were not significant at an acceptable level of statistical probability.

Analysis of variance was used to test the difference in means of yields, acreage, and production of major crops between the periods of 1956-60 and 1961-65. Increases, significant at the .05 level were found only in wheat yield, maize yield and production, and onion production and acreage. FAO indices of total production and production per capita show higher levels for the 1960's than for the 1950's, but the production per capita for 1962 to 1966 remained relatively constant. On the other hand, indices developed by the U.S. Department of Agriculture show declines in production per capita from 1964 to 1968. There was no way of accounting for the differences in these data, nor of judging differences in accuracy. Total agricultural income at constant prices increased in each year of the plan period except 1962; but changes in the agricultural income per capita were not significant at the .05 level. However, the population growth rate was 2.6 percent, and a substantial program for agriculture probably was required merely to keep up with this accelerated population growth rate. Agricultural growth was handicapped by early delays in irrigation and other land projects and unusually severe pest damages to crops. Better design and implementation of the agricultural programs could have made it possible for agriculture to more nearly fulfill its role in providing foreign exchange and sufficient food.

Important institutional changes in sectors other than agriculture included nationalization of a large part of the industrial sector, labor laws, and development of the planning organization. The lack of planning organization and staff at the regional and local levels, lack of coordination among units at the national level, shortage of qualified staff, and lack of data were handicaps to the development planning process.

Total public investment increased from \$272 million in 1953 to \$394 million in 1960 and to \$838 million in 1965. Public investment in the plan period of 1961-65 amounted to \$3,479 compared with \$1,935 in the immediately preceding five years. In constant prices national income increased in each year of the plan period, from \$3,136 in 1961 to \$4,053 in 1965, an increase of 37 percent. By sectors, the increases amounted to: 16 percent for agriculture, 53 percent for industry, and 38 percent for services. National income per capita increased from \$115 in 1960 to \$138 in 1965.

While the plan targets called for about 60 percent of the increase in national income to be invested, the increments of actual public investment amounted to an average of 32 percent of the annual increments in income. From 1956 to 1960, an average of 15.0 percent of national income went into public investment. This was increased to 18.8 percent in 1961 to 1965. This average rate of investment is quite consistent with the theoretical model of: (population percentage growth + percentage income growth per capita) x (capital/output ratio) = percent of national income invested. During the plan period, population increased at the rate of 2.6 percent, per capita income increased at the rate of 2.8 percent, and an average of 18.8 percent of national income went into investment. If these growth rates and share of income invested are correct, this means that the capital/output ratio in the aggregate was 3.5, before adjustment for private investment. This ratio is consistent with results obtained in other studies.¹

¹Jan Tinbergen, The Design of Development (Baltimore: The Johns Hopkins Press, 1958), p. 74.

Finally, there is strong evidence that the growth rate in national income was accelerated during 1952-60 and in 1961-65 by the more positive role that the Government of Egypt played in economic and social affairs. However, the increase in population growth rate reduced the growth rate in per capita income below what it would have been. Despite the higher population growth rate, the evidence indicates a significant increase in per capita incomes in the economy as a whole. In agriculture, there were wide year-to-year fluctuations, but it appears that total growth just about kept pace with population. While there are reasons to question the exactness of the data, apparently sufficient consistencies exist to support these conclusions. On the other hand it cannot be concluded from this study that Egypt has passed the "take-off" stage and moved into one of perpetual "sustained growth."

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BIOGRAPHICAL SKETCH

Mohamed Ismail Farh was born January 1, 1939, in Belbeis Sharkya, Egypt, U.A.R. In June of 1957, he was graduated from Belbeis Secondary School. He received the degree of Bachelor of Science in Agriculture in June, 1961, from Cairo University. He worked as instructor for Agricultural Economics at Asyut University from October, 1961, to May, 1963, and in Cairo University from June, 1963, to April, 1964.

He came to the United States in April, 1964, and enrolled in the Graduate School of the University of Florida. From then until the present time he has pursued his work toward the Degree of Doctor of Philosophy in Agricultural Economics.

Mohamed Ismail Farh is married to Sohair Mahmoud Saber and is the father of two children. He is a member of Alpha Zeta, and the American Agricultural Economic Association.

This dissertation was prepared under the direction of the chairman of the candidate's supervisory committee and has been approved by all members of that committee. It was submitted to the Dean of the College of Agriculture and to the Graduate Council, and was approved as partial fulfillment of the requirements for the degree of Doctor of Philosophy.

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